

Borough of



Cheltenham.

ANNUAL REPORT OF THE SANITARY CONDITION

ETC., ETC., OF THE

BOROUGH OF CHELTENHAM.

FOR THE YEAR 1911.

BY

J. H. GARRETT, M.D., D.P.H.,

MEDICAL OFFICER OF HEALTH,

Together with the Report of the Chief Sanitary Inspector,

ALSO THE

Annual Meteorological Report by Mr. A. C. Saxby.

"Salus Populi Suprema Lex."

PRINTED BY ORDER OF THE SANITARY AUTHORITY.

CHELTENHAM :

G. F. POOLE, PHENIX PRESS, BENNINGTON STREET.

BOROUGH OF CHELTENHAM.

PUBLIC HEALTH COMMITTEE.

MR. ALDERMAN W. N. SKILLICORNE, J.P.

(Chairman of the Committee).

THE MAYOR (MR. COUNCILLOR C. H. MARGRETT).

MR. ALDERMAN G. NORMAN, J.P.

MR. COUNCILLOR J. H. BLAKENEY, M.R.C.S.

MR. COUNCILLOR E. C. GREEN.

MR. COUNCILLOR J. H. HANSON POWELL.

MR. COUNCILLOR T. REES JONES.

MR. COUNCILLOR R. STEEL.

MR. COUNCILLOR J. STEWART.

MR. COUNCILLOR HERBERT STROUD.

MR. COUNCILLOR W. J. F. WOOD.

MR. COUNCILLOR J. P. WINTERBOTHAM.

Town Clerk—MR. R. OWEN SEACOME.

Borough Surveyor—MR. J. S. PICKERING.

MEDICAL OFFICER'S DEPARTMENT.

Chief Inspector of Nuisances—A. E. HUDSON.

Assistant Inspectors—

E. J. MANDERS. C. W. CLIFFORD.

Disinfector—W. TOWNSEND.

Clerk—F. R. JEFFORD.

Medical Officer of Health—J. H. GARRETT, M.D., D.P.H.

*To the Mayor and Members of the Sanitary
Authority of the Borough of Cheltenham.*

GENTLEMEN,

I beg to present to you my Annual Report for the year 1911.

Annual Reports of Medical Officers of Health, whilst being the only source of public information upon local statistics and conditions pertaining to Public Health, have hitherto varied much in style of writing, and in contained material. To bring all such Reports into a more easily comparable state, the Local Government Board last year sent out a "Memorandum to Medical Officers of Health on the Preparation of their Annual Reports," and the instructions of this communication have been followed as closely as possible in preparing this Report.

I have the honour to be, Gentlemen,

Yours obediently,

J. H. GARRETT,

Medical Officer of Health.



Digitized by the Internet Archive
in 2017 with funding from
Wellcome Library

<https://archive.org/details/b29101827>

INDEX.

	PAGE
Natural and Social Conditions of the District:—	
The Borough of Cheltenham	7
Site Aspect and Geology	7
Altitude and Climate	7
The Population	8
Peculiarities in Age and Sex distribution of the Population	11
Industries	11
Institutions for care of the Sick, &c.	12
Number of Paupers relieved, 1911	12
Sanitary Circumstances of the District:—	
Water Supply	13
Rivers and Streams	14
Drainage and Sewerage	14
Scavenging	14
Schools	15
Milk Supply	16
Meat and other Food Inspection	17
Sale of Food and Drugs Act	18
Analyses and Results, 1911	19
Housing of Artizans and Labourers	20
Summary of Routine and other Sanitary Work done, 1911—	
Report by Chief Sanitary Inspector	21
Sanitary Inspections of District and Results	22
House-to-House Inspections	24
Statement of Houses Closed as Unfit for Habitation	26
House Sanitation	26
Re-Drainage Work in Tivoli District	27
The Corporation Sanitary Certificate	28
Inspections under the Factory and Workshops Act	30
Slaughter Houses	33
Diseased Meat and other Food Materials destroyed in 1911	34
Butchers using the public Abattoir	35
Number of Animals slaughtered in the Abattoir	36
Inspection of Food Shops	36
,, Common Lodging Houses	36
,, Dairies, Cowsheds and Milkshops	36
Sanitation of Schools	37
Paving of Yards	37
Ash Receptacles	37
Offensive Trades	38
Legal Proceedings and Results	38

Sanitary Administration of the District :	PAGE
New Public Health Duties, and the failure of the Local Authority to engage sufficient Staff to carry them into effect	40
The Delancey Fever Hospital at Cheltenham, and its need of Support and Management	42
Administration of Local and Adoption Acts	45
Want of Chemical and Bacteriological Laboratory	46
Prevalence of, and Control over Acute Infectious Diseases :	
Zymotic Diseases in 1911	47
Scarlet Fever	47
Diphtheria	47
Enteric or Typhoid Fever	48
Measles	49
Epidemic Infantile Diarrhœa	49
Influenza	49
Vaccinations	50
Table of Zymotic Diseases Notified since Notification began	49
Hospital Isolation of Infectious Diseases	50
School Intimations of Existent Diseases	50
PREVALENCE AND CONTROL OVER TUBERCULOSIS :—	
Notifications of Tuberculosis	51
Work done and required in connection with Tuberculosis	52
INVESTIGATION OF OTHER DISEASES :	
Typhoid Fever	54
Measles	54
Epidemic Infantile Diarrhœa	55
Means for Preventing Mortality in Child-birth and Infancy :—	
Early Notification of Births Act not adopted	56
Vital Statistics :—	
Summary of Statistics for 1911	57
Births and the Birth-Rate	57
The Infant Death-Rate	58
Total Deaths and the General Death-Rate	59
The Death-Rate from Zymotic Diseases	59
„ „ „ „ Phthisis or Pulmonary Tuberculosis	59
„ „ „ „ Cancer	60
„ „ „ „ Respiratory Diseases	60
Table of Statistics for the last 10 years	61
Ward Statistics	62
Vital Statistics of England and Wales compared with those of Cheltenham	62
Deaths in Institutions, 1911	63
Deaths registered in Cheltenham belonging to outside district	63
Deaths registered in outside district belonging to Cheltenham	64
Deaths certified by Coroner after Inquest	65
Local Government Board Tables, I., II., III., IV.	66—69
Causes of Death pertaining to the district in 1911, arranged according to the International List	70
Meteorological Report for 1910 by Mr. Saxby :—	75

Natural and Social Conditions of the District.

The Borough of Cheltenham.

Cheltenham is an attractive residential borough in the West of England, situated about a hundred miles from London, in the County of Gloucester. Formerly much sought for the medical benefit of its mineral waters, and as a rendezvous of fashionable society, it passed from a place of temporary sojourn to one of permanent habitation by reason of the natural beauty of its situation, and the pleasures and entertainments which it constantly afforded. Thus a fine town of thirty or forty thousand inhabitants sprang up in the first third of the last century.

When at a later date the stream of seasonal visitants had been in part directed by change of fashion to other sources of health and pleasure, this place was found to be a suitable centre for the foundation of a superior modern educational interest, and several fine colleges here arose, by the fame of which Cheltenham is best known to the latest generation.

SITE, ASPECT AND GEOLOGY.—The town stands at the foot of the Cotswold Hills at the edge of a wide vale, the more open aspect being towards the West, and the hills rise on the other side within a short distance extending towards the north-east and south-west in a long range of heights. The oolitic limestone of these hills is at a higher level than any part of the town, which stands upon the lias clay, and upon extensive beds of sand that through about half the town's area overlies the clay to a considerable depth.

ALTITUDE AND CLIMATE.—The difference in altitude within the boundaries of the borough is not very considerable. The altitude of the greater part of the town averages a little over 200 feet above sea level. In the suburbs, on the hill slopes, there are houses at a considerably higher altitude as the Cotswolds rise in the near neighbourhood to a height of 1,000 feet.

The climate in the town itself is mild and unirritating, that of the neighbouring hills bracing and tonic in the highest degree. The rainfall and hygrometric conditions generally

as indicated by the measurements of the Borough Meteorologist are moderate as compared with the rest of England. The degree of sunshine is about the usual average for places in the English Midlands, and never so excessive in the hottest summers as to call for a greater measure of shade than that afforded by the numerous trees and avenues with which the streets and gardens are planted. The fierceness of winter in snow, fog, frost and biting wind is also considerably modified on the Cheltenham side of the Cotswold Hills. There seems plain evidence that the climate is particularly suited to elderly people, tending to longevity; also to young people, as witnessed in the generally sound health enjoyed by the students of the numerous schools and colleges. Active outdoor exercise, for taking which there are here a good many inducements, is the effective remedy against any lassitude felt by middle aged persons, which, rightly or wrongly, is attributed to climate. The leisurely three miles walk in the country that has no object besides interests in the surroundings, is an occupation of value in maintaining health in the climate of this locality, or, perhaps, in that of any locality. I am not aware that there is anything pertaining to peculiarity of climate at Cheltenham that is responsible for the production of any disease in particular, though there are certain diseases that figure a little more prominently in our returns as causes of death than they do in the statistics of the country at large. This latter fact is however explained by the difference revealed by the census in age and sex distribution in our population as compared with the population of other districts.

THE POPULATION.—The estimate of an increase of a couple of thousand persons to our population in the last ten years proved erroneous. This estimate was founded upon the number of occupied houses in the borough, which had considerably increased during the last 10 years, and the average rate of persons in each house as per the previous census, with what was considered a liberal allowance for losses sustained by other known or possible causes.

The number counted is likely to be inexact and insufficient to some extent, by reason of a certain number of persons having avoided being counted in the borough, to suit an interest that required the population to remain below 50,000. Just before the census took place also, there was a call from the party advocating the extension of the franchise

to women advising their members to refuse to be counted, and these unusual tactics may together have made a difference of a few hundreds. The decrease must have been mainly due however to the houses of the town containing fewer persons for each house in 1911 than in 1901. The lessened birth-rate leading to fewer children being present in the smaller houses was probably the chief cause. I was aware from counts of the population made prior to the census by the Sanitary Inspectors in certain of the poor streets, that the rate of population per house in those streets was very low, a considerable number of such houses yielding a no greater average than 3 per house, and whole streets having an average of no more than 3.5 inhabitants in its houses. As some of these houses are very small, this may indicate a desirable decrease of overcrowding, but the falling off of population on account of a stay in the natural increase is not without its serious side. Locally, a diminution of population results to some extent in loss of importance and prestige for this town in comparison with other towns; and nationally, when the relative want of children pertains to the whole country, a similar loss of importance for England and the English is suggested among nations. The limitation of the family has now extended to the poorer classes, but the felicitation that may be experienced in some minds by this consideration is not sustained by a contemplation of the deficiency being made good by an increase in those of better development, greater capacity and less dependence.

The difference between the births and deaths in the borough in the ten years had been 2,600 in favour of the births, but one is aware that upon account of removals an estimate of the populace made upon the basis of natural increase, or difference between the numbers of births and deaths, is not to be relied upon. But the estimate in our own case had been made upon the known increase in the number of inhabited houses during the ten years, and upon the supposition that the average number of inhabitants per house had remained the same as was discovered by the previous census of 1901. This average number per house was 4.77 and as we had a nett increase of 600 inhabited houses between 1901 and last year, the supposition that the population had increased 2,000 seemed to leave ample margin for the possible fact that the size of the houses recently built, taken all

together, might have very slightly reduced the average size of house throughout the town. In consideration of the usually unexpected fact that 7,000 out of the 11,000 (using round numbers) of the houses in the borough have an annual value of no more than £16, it is probable that the additions did not decrease the average size of house. To get the nett number of 600 additional houses, the fact of there being 200 more empty houses than before was taken into consideration, but the additional 200 empty houses were not in considerable proportion large houses, the additional vacancies having resulted chiefly from houses of small size being left by tenants, who went into modern new houses, either situated within the borough, or immediately outside the boundary. Fully 1,000 new houses were built within or immediately beyond the boundary during the intercensal period, and most of these, whilst having modern conveniences and other attractions, were let at the same, or only a slightly greater rent than the houses of older and less convenient type which were in occupation. The new building was in fact partly in excess of the demand arising out of increase of population.

Nevertheless there were an additional 600 houses upon the rate-books, figuring as occupied, at the end of the ten years, as compared with those on the rate-books at the date of the previous census, and as the count at that former census had yielded a number of inhabited houses, and a total population which gave the average population of 4.77 persons per inhabited house, the additional 600 inhabited houses should have resulted in 2,862 inhabitants being added to the population, whilst my estimated increase had been only 2,000.

The Registrar-General has not yet been able to supply the number of inhabited houses in the borough as discovered at the census of last year, but suggests to me that a comparison between the number of families or separate occupiers existing at the time of the two census enumerations supplies more reliable data for calculation of what the population might be expected to amount to.

At the census of 1901 there were 11,036 "families or separate occupiers" in Cheltenham, and a population of 49,439. At the census of 1911 there were 11,346 "families or separate occupiers." with a population of 48,944. These are the Registrar-General's figures.

But at the same rate of population per family or separate

occupier as that which held in 1901, the population in 1911 should have been 50,827. The result of the count, being 48,944, is therefore 1,883 fewer than was to be expected by a consideration of the increased number of "families or separate occupiers."

The census being taken as accurate therefore, the cause of the decrease must lie in the diminution of the average number per family, and it is probably accurate to consider it to be partly a reflection of the diminished birth-rate, the families counting fewer members by reason of the fewer children they possess. The average birth-rate during the last 10 years was 19 per 1000 of the population, the average for the previous 10 years 21.4, and the result about 1,200 fewer children born in the 10 years, than there would have been had the former birth-rate been maintained.

PECULIARITIES IN AGE AND SEX DISTRIBUTION OF THE POPULATION.—The young adults in our population, especially young male adults, and young married couples, are below the average relative number in the population of the country at large. There are a large number of elderly persons with us, who are retired from active business and professional pursuits, and the part of our population over 50 years of age is in excess of the relative average above that age in the general population. These facts tell upon the death-rate, the last mentioned in particular constituting a heightening cause. There are more females than males in the town by about 3 females to 2 males. This fact also may make some difference in the death-rate from one or two special causes. We have to await the results of the last census which will be published this year to give us the more up-to-date information in these connections.

INDUSTRIES.—There is no large industry in this town giving occupation to numerous workers. There are several minor manufacturing industries, but nothing of sufficient extent to materially affect the statistics by reason of being exceptionally unhealthy.

Probably the making of wearing apparel is the manufacturing industry which employs most individuals both men and women. The main part of our workshops, and of our outworkers belong to this trade. The various trades supplying domestic necessities employ much labour, and the domestic servant class is important, including gardeners and other out-

door men-servants and charwomen. There is a considerable remainder however, whose occupation is indefinite—common labourers and odd-jobbers, many of them in very poor circumstances.

INSTITUTIONS FOR CARE OF THE SICK, ETC.—This town is well supplied with hospitals and dispensaries supported by voluntary contributions, and a large amount of gratuitous treatment is done. The General Hospital with an accommodation for in-patients of 114 beds, its out-patient and special departments, and its Branch Dispensary is the leading institution. There are also a Special Hospital with in- and out-patient departments for Eye, Ear and Throat, besides the special department for the same at the General Hospital, Orphanages, Asylums for the Blind, Female Refuge, Home for Sick Children, &c.

The Victoria Home District Nursing Association has for many years done most valuable work of a charitable and assisting kind in the town and neighbourhood, in supplying nurses both for general and obstetric nursing work, and in maintaining a small hospital for lying-in cases. The greater part of the midwifery practice of the town is now done by the nurses of this institution. A branch of the Charity Organisation Society assists in providing medical attendance in certain cases.

There are several Friendly Societies in the town with arrangements for giving medical benefits. Some few years ago, the medical men appointed by these societies resigned with the view of forcing a higher rate of pay, when a number of the societies united and appointed a doctor from outside to give whole time.

As to Poor Law Relief the Clerk to the Guardians has been good enough to give me the following figures for the Cheltenham Union, and he tells me that six-sevenths of the totals may be taken to appertain to the Borough of Cheltenham with its population of 49,000.

NUMBER OF PAUPERS RELIEVED 1911.—In 6 months to January 1st, 1911, indoor 503 ; outdoor 1,155 ; in 6 months to July 1st, 1911, indoor 402 ; outdoor 759. The cost of provision of Poor-law relief was for the year ending 30th September, 1911 : Out-relief £5,224 ; Indoor-relief £5,594.

Sanitary Circumstances of the District.

Water Supply.

The water supply for Cheltenham is derived from several sources. The main source is from the Cotswold Hills, and consists of water collected from springs that arise at the base of the oolite of these hills, together with some upland surface water forming the head of the little river Chelt, across whose course a dam has been thrown to form an impounding reservoir at Dowdeswell three miles from the centre of the town. There are other smaller reservoirs for collecting the spring water. An assisting supply, which is brought into use for greater or less length of time in summer and autumn is derived from the river Severn above Tewkesbury, where it is filtered before delivery. Another assisting source of supply, formerly important, and now occasionally called upon, is a well in the sand bed on the upper side of Cheltenham, within the borough, which is capable of yielding a considerable quantity of hard but otherwise pure water. In normal seasons the supply is from the reservoirs during about 8 months of the year, this supply being augmented from the Severn during the other 4 months.

During the extremely dry summer of last year more water than usual had to be brought from the Severn and the filters were put under considerable strain, as the long drought allowed of a greater vegetable growth to take place in the water which was found to rapidly clog the filters. This experience led to the adoption of additional methods of purification which are now in process of installation, and which promise to effectually place us in future out of reach of the possibility of ever running short of water, whilst insuring a better product from this source at all times.

The general supply of water may be said to be ample. At no time during the last 25 years has there been any need to curtail the constant supply, which is laid on direct to the houses, without the intermediation of household storage cisterns.

Rivers and Streams.

The neighbouring parish of Prestbury has caused some pollution to a border water course by overflow from a main sewer. Otherwise no stream within the district has suffered any noticeable pollution. The dry condition of the Chelt was taken advantage of last summer to cleanse its bottom through a considerable length where it passes through the centre of the town.

Drainage and Sewerage.

The water carriage system being employed throughout the district, excepting for a few remotely situated suburban houses, the condition of sewers and drains is an important feature in the sanitary aspect of Cheltenham. I have urged the policy of relaying all old defective sewers, and this work proceeds slowly. Two districts of considerable size comprising the poorest quarter and the richest quarter of the town have been reseeded throughout within recent years. The Local Government Board has sanctioned the cost of reseeded a third district, which has been surveyed and mapped out for the purpose. A portion of this work in the sub-district known as Tivoli has just been completed. The parts reseeded have been sanitarily much improved by obtaining new sewers. In connection with the relaying of the sewers all the connected house drains have been specially inspected, tested and relaid where necessary, and defects of fittings and connections remedied. The present condition of the North Ward for example is so greatly improved in the matter of sewerage and house-drainage that a better general health of the inhabitants has no doubt been insured as a consequence. The continuation of this very sound improvement work should not for an instant be stopped, but the remainder of the South-East reseeded district be at once proceeded with. The marked advantage of this work must be appreciated at once by contemplating the work recently done in the Tivoli district, as recorded by the Inspector of Nuisances on another page.

Scavenging.

The scavenging, or collection of house refuse, &c., is regularly performed, and is sufficiently frequent to obviate nuisance. Moveable galvanized iron receptacles are in wide

use, and are everywhere recommended in preference to fixed built dust-bins. They wear out, of course, but the expense of occasional renewal is not very heavy.

Schools.

The epidemic of Measles which was rampant in the town during the first half of the year told heavily upon the school attendance, especially in the infants' departments. Nine infants' departments were closed on account of this disease affecting the scholars for periods varying from three to four weeks. The higher standards of some of the schools were somewhat affected, but experience has shown that it is seldom of advantage to close any department besides the infant department. It is advantageous to close the infant department, no doubt, when this is done at an early stage of the attack of the epidemic. Theoretically, after a period of comparative freedom from the disease, the occurrence of a single case amongst the scholars of an infant school, especially if the first symptoms were noticed in the child whilst in school, should suffice to cause the school to be closed. The thought of the very great interruption to the school life then brought about is, however, usually sufficient in practice to prevent the closing of the school until the attendance is thinned by a good many absentees on account of Measles. The school is then rather illogically closed when perhaps all the harm that could be done by the children being together has been done. Measles, however, is most dangerous to the brothers and sisters at home who are under school age from 1 to 4 years old, and death to them is brought from the school by the slightly elder child conveying the disease in its own body from school to house. This consideration should cause infant schools to be closed at a very early period in the Measles attack without any stroke of conscience as to school attendance, which after all is worth nothing at that age.

One would close an infant school more readily if one were sure the children would be cared for at home. It is convenient to many parents to send children to school to get them off their hands, and I fear there are instances where the children come home at mid-day to an empty, and even locked-up house, with nothing to eat. In this connection the penny dinners provided at a few of the schools must be a boon, and such a provision should be made in most of the schools.

Some remedial measures that were required during the year in the sanitary condition of schools are noted upon another page, and for the main part the schools are now in pretty good condition, only a few of them remaining deficient by reason of ancient style and bad original construction that it is not easy to entirely remedy.

The medical inspection of school children is now thoroughly established here, as well as a system which is affording a large amount of treatment of the defects discovered at inspection. More information on this score will be found in the Annual Report of the School Medical Officer, who is also Medical Officer of Health in this district.

Milk Supply.

In former reports I have commented upon the want of greater control over the production and sale of milk. The conditions in this connection remain unsatisfactory in this district. A large proportion of the milk comes from outside, and in connection with this milk we have no accurate knowledge as to where it is produced, as no registration is required of the producer in the district where he finds his market, when the latter is not the same as that in which his farm is situate.

There is still much dirty keeping of cows everywhere, and no construction of cowsheds that can be devised will suffice to keep cows clean in the absence of great and continual care in littering, removing soiled litter, and cleansing the cows. The filthiness of the cowsheds is best avoided by keeping cows in the open field for as much of the four-and-twenty hours, winter and summer, as possible, allowing for feeding and milking. It has been thoroughly proved in this locality that cows in milk can be kept in the field on the coldest winter night without harm to the cows or any loss of milk. When they must be in the shed they should not be allowed to lie down in their dung, and to avoid this requires the immediate removal of the dung and a supply of fresh litter. The best cowsheds are simple structures with accommodation for a single range of stalls, with back and side walls to the shed, but no front wall, properly floored and with good convenience for feeding and watering. Such sheds require no windows and no provision for ventilation other than some box louvres placed here and there upon the roof ridge. These open sheds, when well

littered and kept, are sufficiently warm in the hardest weather, and are healthful for the cows, and lighter, sweeter, and more satisfactory than any other kind of shed.

The multiplication of milk sellers requires to be checked. The applications sent in by persons to be placed upon the register as dairymen or purveyors of milk are too numerous, every little general-shop keeper thinking to add a few shillings a week to income by retailing milk over the counter, and the storing and handling of milk in such a promiscuous way is distinctly dangerous, milk being so easily infected with disease germs.

We look for the Bill that is to be introduced into Parliament by the Government in the present session to give powers for the inspection of milking cows, with the object of removing all diseased animals, requiring the more cleanly keeping of cows and production of milk, prescribing the mode of storing, transmission and handling of milk, restricting its sale to licensed persons, and making more effective the law that forbids adulteration and removal of cream.

Meat and other Food Inspection.

In respect of public abattoirs *versus* private slaughter-houses, we remain in the same position as for some years past. A portion only of the proposed abattoir has been built, and 18 private slaughter-houses remain in the town, whilst the powers we possess for compulsory closure of these private places are in abeyance, the Council not being disposed to pay the considerable compensation to owner and occupier of the slaughter-houses which the Provisional Order prescribes, and complete the building of the public abattoir as originally planned. Considerable opposition has been encountered on the part of the butchers, who, at the time when the abolition of the private slaughter-houses was seriously under discussion, got themselves so strongly represented upon the Public Health Committee as to effectively block all action.

Although an effective supervision of the meat trade is impossible under existing circumstances here, the quantity of diseased and unsound meat seized or surrendered each year is now considerable. Tuberculosis is of somewhat frequent occurrence in pigs and bovines, and for the greater part the presence of the disease is only discovered after slaughter. The inspections of meat and slaughter-houses have to be taken

as one of the numerous duties of the general Inspector of Nuisances, who gives what time he can afford, and has made systematic visits on the special evenings of the week upon which the greater part of the slaughtering takes place, though this means working late hours.

As to the sanitary condition of the slaughter-houses, the best of the private slaughter-houses in the town is a bad and insanitary place as compared to an apartment at the public abattoir : a visit and glance at one and the other would satisfy any unprejudiced person of that. Many of the other private slaughter-houses, from their situation in the midst of thickly-populated parts of the town, their approach, and their general unsuitability, have long required to be abolished. I have reported this on many occasions ; in fact, the question has been uninterruptedly agitated for thirty years.

Inspection of other food substances has resulted in occasional seizures and surrenders. The list of the meat and other articles destroyed during last year will be found on page 34 amongst the matters summarized by the Inspector of Nuisances.

Sale of Food and Drugs Act.

The work under this Act is carried out by the police, the analyses being made by the County Analyst, G. Embrey, Esq., of Gloucester. The following list gives the number of analyses made during the year and the results. The arrangement by which this work is handed over to the County Council to be done through the police is by no means ideal. The work ought to be under the direct supervision of the Medical Officer of Health, who should be in a position to give instructions for collection of samples for analysis

Return of Articles submitted to the Public Analyst during the year 1911, with the results of the analyses.

(G. Embrey, Esq., Gloucester, Public Analyst.)

Samples submitted by Superintendent A. W. Hopkins.

Quarter ending March 31st.

Articles submitted.	Result.
2 Samples of Gin, 1 genuine, 1 sample 4% under proof; fined 10/- and 17/6 costs.	
2 „ „ Rice, all genuine.	
2 „ „ Butter, all genuine.	
4 „ „ Pepper, all genuine.	
2 „ „ Tea, all genuine.	
6 „ „ Milk, all genuine.	
6 „ „ Whiskey, all genuine.	

Quarter ending June 30th.

1 „ „ Butter, genuine.	
3 „ „ Pepper, all genuine.	
12 „ „ Milk.	

Quarter ending September 30th.

No Returns.

Quarter ending December 31st.

1 „ „ Sugar, genuine.	
1 „ „ Vinegar, genuine.	
2 „ „ Butter, all genuine.	
3 „ „ Whiskey, 1 genuine, 1 sample 33% under proof (taken informal), 1 sample 33% under proof; fined £1 and 19/- costs.	

On November 15th, 1911, Ernest Jones, Coombe Hill, was fined 2/6 for not having his name and address upon his milkcan in the Borough when selling milk.

Housing of Artizans and Labourers.

The detailed information required by the Local Government Board's "Inspection of District Regulations," in connection with "The Housing and Town Planning Act, 1909," will be found in the Inspector's summary at page 26.

The question of housing appears differently in different localities according to the kind of houses existent, and the quality and number of the population inhabiting them, as well as according to the actual structural condition of the house. These structural conditions may be subject to two different considerations :

- (1) As to defects in structural conditions of the house as it stands, in roofs, walls, floors, windows, drains, and other more or less important appurtenances. These defects may be so great as to prevent rectification whilst the houses remain occupied, and consequently require the house to be permanently closed, or temporarily closed during the execution of repairs. Or, the repairs required may not be so great as to require the house to be closed, being capable of execution whilst the house continues to be occupied.
- (2) The structural condition is deficient rather than defective, that is, in original design and propriety as a residence it has been unsuitable from the first, apart from any defect arising from wear or tear. The most important deficiency lies in want of space. The premises are too small and incommodious for family life. In connection with this want of general space,—size of living room and size and number of bedrooms—there is sure to occur a want of other conveniences of living. Not sufficient closet accommodation to provide a closet for each house. No washhouse or scullery. No sufficient cooking stove. No pantry or store place.

Such places being unsuitable for families, yet come to be occupied by families, who commonly overcrowd them, and there is great difficulty in dealing with them. Though unsuitable for family life one cannot say that they are unfit for habitation even for one or two persons, such as a solitary widow with small means or an aged couple. There are a large number of such houses here let at rents of from 1/6 to 3/- a week and one cannot see one's way to represent these houses

as being unfit for habitation, and such as should be closed under the Housing Acts. There is practically speaking hardly any overcrowding of houses upon ground in Cheltenham.

From time to time a house or two are found in such a condition as to enable them to be represented as unfit for habitation. Otherwise it is a matter of constant repairs, and in this connection I have made some further comments under the heading of sanitary administration.

There is an inspector for new buildings, and the building bye-laws now in force effectively prevent the building to-day of any such houses as those above referred to.

Summary of Routine and other Sanitary Work done in the Health Department during 1911, with Notes thereon.

Prepared by the Chief Sanitary Inspector.

I have the honour to submit my Report as Sanitary Inspector of the Borough of Cheltenham of the work done in the department in the suppression and abatement of nuisances during 1911. The sanitary operations carried out during the period under review have not presented any very exceptional features. Much of the work done is of a routine character, and directed to secure the amelioration of minor insanitary and uncleanly conditions, which, singly perhaps can hardly be said to affect the general health, but the presence or absence of which in the aggregate determines whether a town is healthy or not. Following the practice adopted in recent years, a summary of sanitary operations is furnished below, such a statement however does not adequately express the amount of good work done by your Inspectors in their endeavour to maintain a high standard of sanitation in the town. The work carried out includes house-to-house inspections, the inspections of houses-let-in-lodgings, common lodging-houses, slaughter-houses, bakehouses, cowsheds, dairies, milkshops, factories, workshops, workplaces, and outworkers' places and outworkers' premises; also the inspection of foodshops, and whenever insanitary conditions were found to exist at any of these places, such action as was necessary was promptly taken. The usual practice has been continued of communicating with the owner or agent immediately upon the discovery of any sanitary defect, and supplying detailed

particulars of the work necessary to satisfactorily remedy the same. Long experience has proved that generally it is much easier to get nuisances abated, not only more promptly, but more willingly, by writing a letter, or by calling upon the responsible party, than by the service of a legal notice. There are, however, some, whom nothing less than a threat to prosecute will move to remedy even very serious defects. During the last twelve months 2567 nuisances were discovered in connection with 1025 houses and premises. To abate these nuisances 729 letters and notices were sent to owners and other persons requiring structural alterations, removal of defective drains, soil pipes, etc.

Sanitary Inspections of District and Results.

Total Number of Houses and Premises Inspected	...	11362
Ordinary Inspections	... ..	1827
House-to-house Inspections	... ..	1995
Inspections of Work in progress	... ..	2181
Re-inspections	... ..	1827
Visits to Slaughter-houses	... ..	1339
„ Food Shops	... ..	584
„ Houses Let-in-Lodgings	... ..	83
„ Common Lodging Houses	... ..	64
„ Cowsheds, Dairies and Milkshops	... ..	95
„ Bakehouses	... ..	86
„ Workshops	... ..	73
„ Schools	... ..	42
„ <i>re</i> Infectious Diseases	... ..	469
„ <i>re</i> Public-house Conveniences	... ..	34
Complaints received	... ..	402
Number of Nuisances reported	... ..	2567
„ Houses and Premises dealt with	... ..	1025
„ Legal Notices served	... ..	192
„ Letters Written referring to Notices	... ..	537

DRAINS :—

Drains opened and examined under Sec. 41 P.H.Act, 1875	47
Smoke Tests applied to Drains and Soil Pipes	... 610
Chemical	„ „ „ „ ... 45
Water	„ „ „ „ ... 807
Defective Brick Drains removed	... .. 77
New Drains laid	... .. 287

Length in yards of Stoneware Pipe Drains laid	...	5778
" " Heavy Cast-Iron Pipes laid	...	2944
Manhole and Inspection Chambers provided	...	235
Intercepting Traps fixed	... ..	271
Stoneware Gully Traps fixed	... ..	585
Dip and Bell Traps removed	... ..	240

W.C.'s :—

New Water Closets built	... ..	36
New W.C. Pans of the Wash-down type fixed	...	354
Old Pan Containers and Long Hopper Closets removed		108
Flushing Boxes fixed to W.C.'s	... ..	74
Flushing Boxes repaired	... ..	71
Water Closets and Drains unstopped	... ..	47

SOIL PIPES :—

Soil Pipes and Ventilating Shafts fixed	... ..	245
New Waste Pipes trapped and disconnected	... ..	240

MISCELLANEOUS :—

Rooms cleansed and limewashed	... ..	630
House Roofs, Rainwater Pipes, &c., repaired	...	218
Yards and Areas asphalted or concreted	... ..	113
Ash Receptacles (movable galvanized iron, with covers)		228
Bakehouses cleansed and limewashed	... ..	9
Slaughter-houses cleansed and limewashed	... ..	12
Common Lodging-houses cleansed and limewashed	...	6
Overcrowding in Dwellings abated	... ..	13
Samples of Water taken for Analysis	... ..	42
Urinals provided with a proper supply of water	...	8
Manure Receptacles built or reconstructed	... ..	10
Accumulations of Manure removed	... ..	24

INFECTIOUS DISEASES :—

Inquiries into Cases of Infectious Diseases	... ..	269
Notices to Schoolmasters and Schoolmistresses with regard to Infectious Disease	... ..	52
Notices to Parents with regard to Infectious Disease...		47
Notices to Free Library with regard to ditto	...	9
Articles of Clothing, &c., disinfected after ditto	... ..	2235
Rooms fumigated	... ..	162
Articles of Clothing, &c., disinfected for outside Sanitary Authorities and private persons	... ..	16

House-to-house Inspections.

The systematic house-to-house inspections as required by the Local Government Board under the above Acts has been carried out as far as possible, having regard to the numerous other duties which we have to perform. The North Ward and South Ward received chief attention last year in regard to house-to-house inspections. Advantage was also taken to inspect the houses in Tivoli District whilst inspecting and testing the drains consequent upon resewering that area. Records of the inspections of dwelling-houses have to be made and kept so as to form a continuous record of the work done under the Public Health Act and the Housing and Town Planning Act. The tables given below show the number of houses inspected in various streets in the North and South Wards, the number of houses occupied and void, the number of houses in which defects were found to exist, and the number which were found to be without any defects. It will be readily seen that in every street the majority of houses examined were found to have more or less defects in them. Of the 803 houses examined in these two Wards, no less than 1,765 defects were discovered, giving an average of 2·2 defects per house in all the houses examined. The defects revealed by the inspections varied considerably in extent and character, and included all kinds of nuisances and structural faults usually found in connection with houses of this type ; such as damp walls and floors, leaky roofs, defective eaves, spouting and rainwater pipes ; defective paving or unpaved yards and areas ; defective water closets ; defective drains, &c. It is impossible to adequately convey by an enumeration of defects the amount of good work done by the early removal of such nuisances in improving the sanitary condition under which the people live.

NORTH WARD.

Name of Street.	No. of occupied Houses in Street.	No. of Houses in which Defects were found.	No. of Houses without Defects.	Total No. of Defects found in Street.	Houses Vacant.
Albert St., St. Paul's	41	...	37	...	3
Ambrose Place,					
Ambrose Street...	6	...	6	...	1
Carlton Place, West	6	...	6	...	1
Grove Street.....	24	...	18	...	9
Hamilton Place,					
St. Paul's Road...	28	...	21	...	0
Hanover Street.....	22	...	16	...	3
Hungerford Street...	38	...	30	...	2
Larput Place,					
St. Paul's	24	...	21	...	2
Swindon Road ...	150	...	103	...	13
Tewkesbury Road...	68	...	42	...	6
Victoria Street	39	...	32	...	1
	<hr/>		<hr/>		<hr/>
Totals.....	446		332	113	41

SOUTH WARD.

Ewlyn Road	31	...	17	...	12	...	33	...	3
Ewlyn Terrace	25	...	22	...	3	...	114	...	0
Exmouth Street ...	39	...	36	...	3	...	123	...	1
Fairfield Avenue ...	14	...	13	...	1	...	50	...	1
Fairfield Parade ...	23	...	18	...	5	...	63	...	1
Fairfield Road	19	...	17	...	2	...	67	...	1
Fairfield Walk	19	...	18	...	1	...	49	...	0
Langdon Road	34	...	23	...	11	...	56	...	3
Leicester Terrace...	23	...	22	...	1	...	77	...	1
Mapledene Cottages	19	...	15	...	4	...	50	...	1
Mapledene Terrace	13	...	9	...	4	...	28	...	1
Montpellier Retreat	11	...	10	...	1	...	64	...	3
Naunton Lane	12	...	9	...	3	...	14	...	2
Naunton Parade ...	9	...	7	...	2	...	21	...	0
Norwood Road	15	...	14	...	1	...	52	...	1
St. Philip's Street...	31	...	29	...	2	...	116	...	3
Suffolk Street	5	...	3	...	2	...	10	...	0
Whitecross Square	15	...	12	...	3	...	41	...	2
	—		—		—		—		—
Totals.....	357		294		61		1038		24

Housing and Town Planning Act, 1909.

*Tabulated Statement of Houses dealt with during the year 1911,
under the Housing Act of 1909.*

No. of houses inspected	...	...	...	...	...	1
No. of houses considered to be unfit	...	...	...	...	...	1
No. of Representations made to Local Authority	...	...	...	...	...	1
No. of Closing Orders made	...	...	...	...	...	1
No. of houses made fit without Closing Orders	...	...	...	...	...	0
No. of houses made fit after Closing Orders	...	...	...	...	...	0
No. of Demolition Orders made	...	...	...	...	...	0

During the year five houses, three in Albert Street, St. Peter's, and two in Sherborne Place, were demolished. The Closing Orders for these houses were made in 1910, and the owners demolished them voluntarily during this year.

Character of chief defects in the House Closed : It was in a damp, dilapidated, filthy condition with defective yard paving, defective drainage, etc.

House Sanitation.

An unusual amount of time and attention has been devoted this year to the inspection and testing of house drains and sanitary fittings. In addition to the ordinary routine sanitary work and that done to obtain a Corporation Sanitary Certificate, we applied the smoke test to and examined the condition of all the house drains in Tivoli District before they were connected with the new sewers.

Forty-seven complaints were made to the Public Health Committee under Sec. 41, Public Health Act, and authority was given by them in each case for the drains to be opened and examined and for notices to be served upon the owners requiring them to do such work as was necessary for the abatement of the nuisance.

A good deal of drainage and sanitary work has been done as usual to obtain a Corporation Sanitary Certificate, and also by verbal notices. 807 water tests, 610 smoke tests, 44 chemical tests have been applied, and the laying of 287 house drains supervised. The total length of drains laid was 5,778 yards of stoneware pipes and 2,944 yards of coated heavy cast iron pipes. A considerable length of iron pipe drains have been used for outside work. It is becoming generally recognised here that iron pipes are far more satisfactory than stoneware pipes for drainage purposes, even when the latter are

surrounded with concrete. Experience has shown that the former are far superior, especially when the drains have to be laid in shifty clay soil. This superiority of iron pipes for drainage purposes has been proved beyond doubt in this district where house drains are subjected to a water test, and periodical tests for the purpose of obtaining a Certificate.

As the work of resewering the Tivoli District proceeded, the house drains were also examined and in the case of those found defective, a letter accompanied with a detailed specification of the work required to be done, was sent to the owner or agent of the property. I am very pleased to be able to state that the owners have in the main very readily complied with our requirements. Out of the 188 houses requiring to be redrained, 154 have been done and the remainder will, I expect, be finished in a few weeks time.

The following table gives details of drainage work done in Tivoli District.

No. of drains examined ...	...	...	...	288
„ defective, requiring to be entirely relaid ...	...	...	...	188
„ slightly defective requiring to be repaired ...	...	...	...	40
„ found in satisfactory condition ...	...	...	...	60
No. of brick drains ...	...	...	...	50
„ defective iron D traps ...	...	...	...	60
„ drains found unventilated ...	...	...	...	100
„ Disconnecting Chambers built ...	...	...	...	35
„ Disconnecting Traps fixed ...	...	...	...	120
„ new Stoneware Gullies fixed ...	...	...	...	250
Length of Stoneware Pipe Drains laid ...	...	...	...	3,233 yards
„ Iron Pipe Drains laid ...	...	...	...	646 „
No. of defective W.C. pans removed ...	...	...	...	70
„ water closets in improper position ...	...	...	...	6
„ „ insufficiently lighted and ventilated ...	...	...	...	6
„ defective Sink Troughs abolished ...	...	...	...	20
„ new Sink Troughs fixed ...	...	...	...	20
„ lead waste pipes fixed to sinks ...	...	...	...	78
„ Letters sent to owners ...	...	...	...	166
„ „ complied with ...	...	...	...	154
„ „ still outstanding ...	...	...	...	12

It will be observed that 65 per cent of the Drains were so defective as to require to be entirely renewed. In a very large number of instances the defects were exceedingly bad, more particularly so in the W.C.'s and near the houses. When this work is completed Tivoli will rank as one of the best sewered and drained districts in the borough.

The Corporation Sanitary Certificate.

Last year 64 additional Corporation Sanitary Certificates were granted, for as many houses, to the tenants or landlords who made application for them. The total number of Sanitary Certificates issued since the commencement of this work is 931. The granting of this Certificate continues to serve a useful purpose, and probably more people would apply for it if they knew that for a small fee, varying from five shillings to a guinea, according to the rental of the house, they could obtain a Certificate which practically guarantees the house to be up-to-date in regard to all its sanitary appliances. This work has been the means of greatly improving the sanitary conditions of the premises for which the Certificates were granted. The inspections for the Certificate frequently revealed serious defects in the drainage system and sanitary fittings of a house when the owner was under the impression that everything was perfectly satisfactory from a sanitary point of view. Periodical testing of the drains and sanitary fittings is one of the best forms of insurance against the evils arising from defects in connection with the sanitary arrangements of a dwelling-house. All who are about to take a house are recommended to have the place thoroughly examined and obtain a Sanitary Certificate before they enter into any agreement or sign a lease.

SANITARY CERTIFICATES.

Situation of Premises.				Gross Annual Value.
Axholme, Pittville Lawn	...	...	...	£110
All Saints' Vicarage, All Saints' Road	...	...	...	65
Atherstone, Hale's Road	...	...	...	30
Austrian Villa, <i>now</i> Nelson Lodge, Trafalgar Street	...	...	...	16
Aireworth, Painswick Road	...	...	...	19
Battledown Court	...	...	...	190
Beechmount, Pittville Circus Road	...	...	...	75
Beechwood House, Montpellier	...	...	...	60

Bourndale, Christ Church Road ...	...	...	...	130
Calderwood, Montpellier Parade	...	...	...	80
Cambray, 26 ...	...	...	...	65
Chadnor, Douro Road ...	...	...	...	105
Coulter, Hatherley Road	...	...	...	150
Edenholme, Evesham Road	...	...	...	140
Ewartville, Charlton Lane	...	...	...	18
Fairview Road, 74 ...	...	...	...	25
Glenholme, Tivoli Road ...	...	...	...	35
Glenfall Terrace, 5 ...	...	...	...	28
Hatherley Lawn, Hatherley Road	...	...	...	126
Hallaton House, Sydenham Villas Road	...	...	...	85
Hillfield, St. Mark's ...	...	...	...	200
High Street, 140 ...	...	...	...	70
Inverclyde, Halland Road	...	...	...	26
Inveresk, Eldorado Road	...	...	...	90
Ivydene, Hewlett Road ...	...	...	...	60
Lansdown Crescent, 12 ...	...	...	...	60
Lansdown Crescent, 13 ...	...	...	...	52
Lansdown Parade, 15 ...	...	...	...	30
Lansdown Place, 27 ...	...	...	...	70
Lamberhurst, Paragon Buildings	...	...	...	50
Lovat House, Christ Church Road	...	...	...	105
Lucerne, Tivoli Place ...	...	...	...	65
Malvern Place, 2 ...	...	...	...	50
Montpellier Grove, 3 ...	...	...	...	32
Montpellier Grove, 6 ...	...	...	...	35
Montpellier Terrace, 7 ...	...	...	...	50
Middlecroft, Princes Road	...	...	...	18
Nethermuir, The Park ...	...	...	...	70
Ocala, Eldorado Road ...	...	...	...	90
Oriel Villas, 2 ...	...	...	...	50
Orrisdale Terrace, 4 (St. Luke's)	...	...	...	22
Plewlands, Halland Road	...	...	...	32
Paragon Parade, 4 ...	...	...	...	30
Paragon Parade, 5 ...	...	...	...	27
Paragon Parade, 6 ...	...	...	...	35
Portland Street, 7 ...	...	...	...	21
Redclyffe, Battledown Approach	...	...	...	45
Rodney Terrace, 4 ...	...	...	...	24
Rosedale Villas, 1 (King's Road)	...	...	...	30
San Souci, Christ Church Road ...	...	...	...	80

Stoneville, King's Road ...	...	...	...	...	26
Steinway, Gloucester Road ...	...	...	...	...	32
Strathtay House, Lansdown Road	...	...	...	...	60
Spa Buildings, 5 ...	...	...	...	...	55
Southfield Villas, 1 (Old Bath Road)	...	...	...	...	60
St. Kilda, Hewlett Road ...	...	...	...	...	70
Upperton, Eldorado Road	...	...	...	...	70
Wellington Square, 11 ...	...	...	...	...	32
Wimborne, Leckhampton Road ..	...	...	...	...	28
Wyborne, St. George's Road	...	...	...	...	80
Whitehayes, Tivoli Road	...	...	...	...	40
Woodside, Tivoli Road	...	...	...	...	38
Winslow, Hewlett Street	...	...	...	...	27
York Terrace, 2 ...	...	...	...	...	50

Inspections under the Factory and Workshops Act.

The whole of the workshops (including bakehouses, workplaces and outworkers' premises) have been visited during the year. The total number of Workshops and Workplaces now on the Register is 561. The total number of visits under these Acts amounts to 745. The Local Authority is the authority responsible for the sanitary condition of the workshops, workplaces, and the homes of outworkers in their district. Sanitary conditions include (a) Cleanliness (b) Overcrowding (c) Ventilation (d) drainage of floor of workshops in which any process is carried on which renders the floor liable to be wet to such an extent that the wet is capable of being removed by drainage (e) sanitary conveniences.

CLEANLINESS.—Eighty-four workrooms were found to require the ceilings or walls, or both, cleansed and whitewashed. The necessary cleansing has been carried out in each case.

OVERCROWDING.—Eight rooms were found to be badly overcrowded. Notices were served on or representations made to the responsible persons and the overcrowding has been abated. Forty workrooms were measured up and cards setting forth measurements have been supplied to the occupiers stating how many persons could be employed in each room.

VENTILATION.—Only four workrooms were found to be insufficiently ventilated, and these have been provided with suitable inlet and outlet shafts.

DRAINAGE OF WET FLOORS IN LAUNDRIES, ETC.—The floors of these places were found generally to be in a satisfactory condition.

SANITARY CONVENIENCES.—Four workshops were found to be without proper sanitary conveniences, and three were found to have unsuitable or defective sanitary arrangements. Suitable and sufficient accommodation has been provided where necessary, and the defective water closets have been repaired and put into good sanitary condition.

Our attention has been called to the following defects in factories and workshops by H.M. Inspector of Factories :— 7 workshops ; whose walls and ceilings were in a dirty condition. These have been cleansed and limewashed, and notice to that effect has been sent to the Factory Inspector.

OUTWORKERS.—The names and addresses of 163 Outworkers were received from their employers. We have experienced as usual some little difficulty in getting in from some employers the returns which they are required under the Act to send into us at the beginning of February and August, although we have reminded them according to our usual practice by circular letter of their obligation to do so. It was only after pointing out to the defaulters that they were liable to a penalty for failing to forward a list, that they sent them in. The homework in this district consists mainly in the making, cleaning or altering of wearing apparel, and any other work incidental thereto.

Last year 184 visits were paid to the various homes in which work is carried on, and 20 sanitary defects were discovered and rectified. In the majority of these places the work is carried out under the most satisfactory sanitary conditions. In no instance was any case found where wearing apparel was being made, cleansed or repaired in a house in which any inmate thereof was suffering from infectious disease. Nor did any case require action to be taken to obtain an order prohibiting homework being done in an infected home.

Report on the Administration of the Factory and Workshop Act, 1901, in connection with Factories, Workshops, Laundries, Workplaces and Homework.

1.—INSPECTION.

Premises.	Number of Inspections.	No. of Written and Verbal Notices.	Number of Prosecutions.
Factories (including Factory Laundries.)	26	8	Nil
Workshops (including Workshop Laundries.)... ..	635	86	„
Workplaces (other than Outworkers' premises included in Part 3 of this Report)	84	6	„
Total	745	100	

2. – DEFECTS FOUND.

Particulars.	Number of Defects found	No. of Defects remedied.
Nuisances under the Public Health Acts :		
Want of cleanliness	84	84
Want of ventilation	4	4
Overcrowding	8	8
Other nuisances	29	29
Sanitary accommodation {insufficient	4	4
{unsuitable or defective	6	6
{not separate for sexes ... ..	...	...
Total	135	135

3.—HOME WORK.

Lists received from Employers.

Nature of Work.	Twice in the year.		Once in the year.	
	Lists.	Outworkers.	Lists.	Outworkers.
Making and Altering Wearing Apparel...	27	163	27	155

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year.—(1).						Number.—(2).
Dressmakers	...	...	...	...	...	90
Tailors	...	...	...	...	...	54
Laundries	...	...	...	...	...	82
Bootmakers	...	...	...	...	...	40
Milliners	...	...	...	...	...	21
Bakehouses	...	...	...	...	...	55
Miscellaneous	...	...	...	...	...	80
Total number of Workshops on Register...						422

5.—OTHER MATTERS.

Class.	Number.
Matters notified to H.M. Inspector of Factories ...	1
Failure to affix Abstract of the Factory and Work- shop Act (s. 133)	3
Notified by H.M. Inspector of Factories	7
Reports (of action taken) sent to H.M. Inspectors	7
Underground Bakehouses (s. 101)	9
Certificates granted during the year	Nil
In use at the end of the year	9

Slaughter-houses.

The number of private registered slaughter-houses remains as last year, namely, 18, and to these 1,069 visits have been paid. By far the larger number of these visits have been made in the evening, when most of the slaughtering is done in this town. Meat inspection, if it is to be at all thorough, must take place at the time of slaughtering, so that the carcasses and organs of the animals can be examined. The examination of dead meat can, under no circumstances, be considered fully satisfactory, as the internal organs, in which evidence of disease is so largely found, are necessarily

absent. A quantity of meat still comes into this town from outside districts which has not been inspected, and the only examination that can be made is when the meat is exposed for sale in the butcher's shop, and this system of inspection is, as already pointed out, far from satisfactory. It ought not to be possible for meat slaughtered outside the town to be exposed for sale until the entire carcase and organs have been examined and passed as fit for food. It should be made compulsory for all persons bringing meat here (not previously inspected and stamped) to deposit such meat and organs at the Public Abattoir or any central station for examination. This course is desirable in the public interest, and also from the meat trader's point of view, for it is unfair that the local butcher should suffer occasional loss from seizure of meat when the trader who buys meat slaughtered outside the borough escapes practically all such loss through lack of inspection at the time when it ought to be made. The bye-laws as to the periodical limewashing of the slaughter-house walls, the removal of garbage, offal, skins, etc., have on the whole been well observed. I have again much pleasure in acknowledging the assistance which some of the butchers have rendered us in calling attention to carcasses which were diseased or of doubtful character, and also for the ready way in which they have surrendered a carcase or part of any animal which we represented to them as being unfit for human food.

Unsound and Diseased Meat, &c., Destroyed last Year as unfit for the Food of Man.

4	carcasses of beef—seriously affected with tuberculosis.		
1	„ „ „ „		Milk Fever
1	Hind Quarter of Beef „ „		Bone Taint
5	sheep—Emaciation		
4	„ Dropsical		
1	„ Pleurisy		
2	Pork Pigs—Liver Disease and Dropsy		
8	„ —Seriously affected with Tuberculosis		
6	Bacon Pigs „ „ „		
6	Bags of Potatoes—unsound		
3	Tins of eggs—unsound		
1	Box of Tripe—unsound		
2	Boxes of Whiting—unsound		
1	Box of Cod Fish—unsound		
25	Pieces of Bacon and Cheese—unsound		

The lungs, livers, or other internal organs of 250 animals which were found to be affected with some parasitical or local affection, were also surrendered and destroyed. The total weight of meat, fish, and unsound food destroyed during the year under review was 4 tons, 1 cwt., 1 qr., 25 lb.

List of Butchers who regularly used the Abattoir during the year.

General Butchers.

Name.	Situation of Premises.
Mr. S. J. Burrows	... Charlton Kings
Messrs. Collins & Co.	... 278, High Street
Mrs. G. M. Davis	... 4, Rotunda Terrace, Montpellier Street
Messrs. A. D. & D. Downham	61, Upper Bath Road
Mr. E. T. Drew	... 95, Winchcomb Street
Mr. G. Dickenson	... Prestbury
Mr. G. Hannis	... 307, High Street
Mr. J. Hayward	... 2, St. Mark's Emporium, Gloucester Road
Mr. L. James	... 21, Upper Bath Road
Mr. P. M. Nash	... 402, High Street
Mr. F. W. Pleydell	... 288, High Street
Mr. H. T. Pryer	... 308, High Street
Mr. J. Smith	... 276, High Street
Mr. Taylor	... Cheltenham
Mr. G. Willis	... Regent House, Swindon Road
Mr. F. P. Carrick	... 294, High Street
Mr. J. Major	... 41, Upper Bath Road
Mr. T. Mills	... 222, High Street
Mr. A. Smith	... 280, High Street
Mr. J. W. T. Jackson	... 243, High Street and 22, Winchcomb Street
Mr. L. Giles	... 76, Tewkesbury Road
Messrs. Locke & Sons	... 17, Clarence Street

Number of Animals Slaughtered in the Abattoir during 1910 and 1911.

	1910	1911
Beeves	879	887
Calves	976	1159
Sheep	3935	4782
Lambs	538	473
Pork Pigs	975	1339
Bacon Pigs	188	172
	<hr/> 7491	<hr/> 8812

Inspection of Food Shops.

The various places where food is sold, were frequently inspected during the year. Several lots of unsound meat, fish, fruit, and other articles of food were submitted for our inspection, and in each case the articles were carefully examined, and sorted if found necessary, the unsound or unwholesome food being in all cases voluntarily surrendered by the tradesmen for destruction. There are some 532 shops devoted to the preparation or sale of food in this town.

Common Lodging Houses.

The number of Common Lodging Houses on the Register is seven and they have accommodation for 180 lodgers. During the year 64 visits were paid to these ; and 8 contraventions were observed ; 4 related to the dirty condition of the walls and ceilings ; 3 to the dirty condition of sanitary conveniences and 1 to dirty condition of bedding and bed clothes. An application was received from one lodging-house for the registration of an additional bedroom, but the Public Health Committee after viewing the place declined to register the room.

Dairies, Cowsheds and Milkshops.

These have been systematically inspected and found in a fairly satisfactory condition. At present there are upon the register 66 milkshops and 16 farms. Seven applications were received during the year, the premises proposed to be used were inspected as to their sanitary condition and suitability for carrying on this trade. Six were ultimately registered, the remaining one withdrawing his application on account of unsuitability of his premises for carrying on such a business.

Sanitation of Schools.

During the year the sanitary fittings of the whole of the Elementary Schools in this town were inspected, when a number of defects discovered, were reported to the School Managers, who had them rectified during the summer holidays.

At two of the schools the old insanitary trough closets were removed and replaced by strong fireclay pedestal Wash-down closets, a full two gallon siphon action flushing cistern being fixed to each closet. The urinals were also provided with a sufficient supply of water from suitable flushing boxes.

The following table shows other defects found at schools :—

Defective flushing boxes
Leaky flush pipes
Dirty walls and ceilings of closet apartments
Dirty seats of water closets
Defective ash receptacles
Defective water closets
Leaky water taps
Defective eaves spouting

Paving of Yards.

The paving of back yards and areas with impervious, hard-wearing material is of great importance, and considerable further progress was made in this connection during 1911. During the year 113 yards and areas have been newly paved, or the defective paving has been taken up and replaced with blue bricks, concrete, asphalte, or other impervious paving material. Plenty of scope for further work remains in this direction. A visit to the back yards of many houses will reveal many hollow places in which the water lies until it gradually soaks into the soil or is evaporated, but during the time it remains, the residents of the house have to get through or round it as best they can.

Ash Receptacles.

Fixed ash receptacles of any sort or size in the neighbourhood of any kind of house should be avoided and abolished wherever possible in favour of movable covered metallic receptacles ; these are so comparatively low priced that the

fact of their having to be occasionally renewed can be of very little consequence. The large brick ash-place used in common for two or more cottages is very often found to be a nuisance, owing to the cover, if there be a cover, being left open, so that the contents of the receptacle get wet and in some cases soddened with wet, rendering its removal more difficult and its destruction more costly, apart from the nuisance caused by the accumulation of a large quantity of house refuse and the foul odours given off therefrom. The movable receptacles greatly facilitate the removal of ashes, and if they were universal much time and labour would be saved in the collection of house refuse. Under Sec. 27 of the Cheltenham Improvement Act, 1889, 228 new ash receptacles were provided in the year as the result of notices served.

Offensive Trades.

The offensive trades carried on in this town are few in number. There are :—

- 2 Fellmongers.
- 1 Tallow Melter.
- 18 Rag and Bone Dealers.
- 20 Fried Fish Shops.

The bye-laws regulating these places have, on the whole, been well observed, although it has been necessary to occasionally call attention to the desirability of removing garbage, etc., regularly, and to require a more thorough cleansing of the floors and yards at the close of the working days.

Application was made by a firm to carry on the business of hide and skin dealers. The application was refused by the Public Health Committee, the site of the premises on which it was proposed to carry on the trade being deemed by them to be unsuitable.

Legal Proceedings.

The following cases were brought into the Court with the results as stated.

For non-compliance with a Notice to abate overcrowding. Fined 10/- and 7/6 costs.

For non-compliance with a Notice to abate a nuisance due to structural defects, Sec. 91 Public Health Act, 1875. The Magistrates made an Order requiring the work to be done immediately. The defendant to pay the costs.

For non-compliance with a Notice under Sec. 46 Public Health Act, 1875. The Magistrates made an Order requiring the house to be cleansed throughout, and imposed a penalty of 1/-, with a further penalty of 1/- for each day that defendant continued to make default.

For Exposing for Sale Diseased and Unsound Meat.

The seizure included two quarters of beef and other pieces of meat. The Magistrates fined defendant £10 with costs.

The meat was part of the carcase of a cow that had been killed on the premises of a farmer, where she had been brought in ill from the field, had lain down and being unable to get up would probably soon have died a natural death had not the butcher been sent to kill her. For exposing this meat for sale the Magistrates inflicted a fine of £10. The other half of the same animal was seized in the neighbouring district of Charlton Kings where proceedings against another butcher in respect of exposing it for sale led to a similar conviction and fine.

A. E. HUDSON, MEM. ROYAL SAN. INST.,
Chief Sanitary Inspector.

Sanitary Administration of the District.

New Public Health Duties and the failure of the Local Authority to engage sufficient staff to carry them into effect.

For some years past there has been a steady increase of work in the Public Health Department, due to various Acts of Parliament and new orders issued by the Local Government Board. A steady succession of these has descended upon us bringing new duties. Lately the Local Government Board have adopted a somewhat imperative tone in connection with work to be done under the Housing and Town Planning Act and the Pulmonary Tuberculosis Notification Orders, by detailing the mode in which these measures are to be carried out, recorded and reported.

In passing and promulgating these new Acts and Orders reliance is placed upon the ready co-operation of the local Council, who must appoint a sufficient number of officers to do the work, and generally must exhibit something of the same interest and desire to see the work carried out as is evidenced in the case of the Central Authority. This local interest and desire is not infrequently lacking.

This may be in chief part due to the local Council failing to thoroughly comprehend the business. Much more time would require to be given than is ever given by the members of the Public Health Committee, for example, to master the details to remembering point of the several Acts and Orders above referred to. The Medical Officer of Health, whose life is given up to these matters as a profession, draws his finger down the pages of the Act or Order, and understands its purport and recognises its connections at once. For the Committee to be in the same position they must have the same professional knowledge. Otherwise, to be of service, they must credit the Medical Officer of Health as being their instructor and adviser.

In Cheltenham there are three sanitary inspectors, one disinfecter, one clerk. The inspectors are one chief and two assistants. House drainage work and other sanitary work done by notice is carried out in Cheltenham with care and

thoroughness, and much of the work is done by specification, the performance of which requires to be looked to. There are the daily list of inspections arising out of complaints and applications; inspections for Sanitary Certificates; inspections of work in progress; testing of house drains in the streets where the new sewers are laid; enquiries into cases of infectious disease notified, and so on, these being things which require first attention. And there are waiting to be done many other things, which receive as much attention as can be given by inspections in as regular an order as possible, but these inspections cannot be sufficient in number—the meat, milk and other food supplies; the slaughter-houses, bake-houses, and workshops; the homes of out-workers; the common lodging-houses and houses let in lodgings; the sanitary conveniences of public-houses; the places where animals are kept; the places where offensive trades are carried on. All this work should be done with absolute regularity and certainty, but the staff is not nearly large enough to allow of that.

Then in addition we have 7,000 houses let a rental of £16 and under, which stand in the list to be inspected and reported upon, after house-to-house inspection. It happens in this town that a very large proportion of our smallest houses are old houses, and in my opinion practically the whole of these 7,000 houses should be looked into once during each year. Last year there were not more than 1,000 regular house-to-house inspections done, *i.e.*, where the man went with the object of doing house-to-house inspections, so that it will take seven years at that rate to get once through the houses. In regard to the worst of these houses they require re-inspection at not longer than six monthly intervals. This special list of worst houses numbers 2,161. Where work is ordered to be done the re-inspections required are numerous.

Now, there is added the work connected with the notification of phthisis. These cases are to be enquired into, traced, cared for, followed. How shall that be done?

Whilst the work has so much increased during the last ten years, there has been no increase of the Health Department's staff here at all in that time. We have never had any woman inspector or health visitor. The work of looking after infant children in the matter of care and feeding has not been touched by the Town Council.

One of our assistant inspectors died, after a short, acute

illness, last year, and I took the opportunity of asking the Committee to revise the staff with the view of increasing it by one member. The man who died was appointed at £100 a year, 10 years ago, and was receiving £120 at the time of his death. The other assistant was appointed on the economising principle at £65 a year. Against all advice and persuasion, the best the Committee would do was to appoint another officer at £65 a year in place of the one deceased who was receiving £120. The other one, who had given $2\frac{1}{2}$ years' service, was raised from £65 to £75, he being a man of between 30 and 40 years of age, and promise was held out to both that they should have a £5 per annum increase up to £100, which they will therefore be getting after 7 years' service. In my opinion £65 for a certificated whole-time sanitary inspector is an insufficient wage, and it cannot be expected that an honest and efficient officer, suitable to be a district inspector for one half of Cheltenham, can be secured and retained here for the payment above indicated. He will either be a good man who will quit us soon, or an undesirable man who will stop a long time. Of course, it takes at least 12 months for a new man to become conversant with our modes of doing business, and for him to acquire a good knowledge of the town.

We have therefore to look upon our staff as numerically the same as during the last ten years, but of reduced power, whilst the work has so largely grown.

In connection with enquiries into phthisis cases, with rendering assistance and advice for the object of preserving infant life, and to ensure a greater personal care and cleanliness and better housekeeping among the poor, a woman Health Visitor is required. To allow the present clerk to do a little outdoor assisting to the Sanitary Inspectors, a junior clerk is required. These additions to the staff should be at once made.

The Delancey Fever Hospital at Cheltenham and its Mode of Support and Management.

One of the most important subjects connected with Public Health work in Cheltenham, and most pressing for settlement at the present time, is connected with the management of the Infectious Diseases Hospital. Last year I presented to the Town Council a report upon this subject, which for the last four years has been ineffectively discussed. In this report I showed the following things :—

That the Delancey Fever Hospital was founded for the isolation and treatment of infectious diseases 40 years ago, by private money left for the purpose, a Board of Trustees being appointed to manage it. Its use was limited to Cheltenham and its neighbourhood.

That the hospital was termed a charity and managed as such, though in nature it was always a hospital for infectious diseases, established chiefly with the public object of preventing the spread of infection. That it was never a charity on the same lines as the General Hospital, since it always obtained payment for the patients received into it.

That 40 years ago the public management of infectious diseases hospitals had not been taken up by local governing bodies, and notification of infectious diseases had not been introduced, and that it was therefore possible at that time and for some time afterwards for the Delancey Hospital to be conducted independently by such a body as its Board of Trustees, the use of the hospital being, however, very limited.

That at the present time, and for some time past, the circumstances as to the management of infectious diseases have undergone an entire change. The Local Governing Council has been charged by law with the management of infectious diseases. The notification of all infectious diseases that are isolated in infectious diseases hospitals has been made a compulsory measure. The Local Councils have been given powers to provide infectious diseases hospitals to receive cases with the view of guarding the public, and these powers have been widely applied, and it has become an impossibility to start or carry on an infectious diseases hospital apart from the Local Council, or apart from the local Medical Officer of Health, because the Council, in the matter of management of infectious diseases, acts entirely through him, the Medical Officer of Health being the person legally appointed to receive notifications of infectious disease, and to take all required action on public grounds, in connection with such cases.

Seeing that it became impossible and absurd under these circumstances to carry on an infectious diseases hospital as an independent institution, or as a charity, all the hospitals of this kind that had a prior existence in the country have been handed over to the public management of the Local Council, with the unique exception of the Delancey Fever Hospital.

Notwithstanding that this hospital is now supported by the Town Council, large payments being made to its funds out of the rates in order to provide gratuitous treatment for all the poor cases that the Medical Officer of Health judges to require isolation, and sends, or forces, into the hospital, and notwithstanding that the Town Council is virtually bound under any circumstances to maintain the hospital, the hospital is still represented as a charity, and the management complicated by the reception into the hospital of patients by independent agreement with the Trustees, it being necessary for the Trustees to obtain money in some way or other to maintain their independence as a governing body.

That although the Trustees have admitted members of the Town Council upon their Committee of Management, this provision is not effective inasmuch as the management of a hospital and its general use is a medical business, and is everywhere considered the particular business of the Medical Officer of Health. The Town Council can only act in any effective connection through its Medical Officer of Health. They can only learn through him the requirements of the town as to the changing needs of providing accommodation for various diseases. It is the Medical Officer of Health who chiefly uses the Hospital, and every case sent into it should go with his cognisance, and under his direction, and be retained and discharged according to his general judgment. The Town Council must see that he is placed in a position in which he can advise as to the use of any and every part of the hospital, and the grounds adjoining, so that they may be brought into immediate use as any emergency requires.

Though no one is able to deny that the proper position of the Medical Officer of Health is superintendent of the hospital and adviser to the managing committee upon all things connected with it, the obsolete mode of managing the hospital is maintained, and the Town Council has no officer connected with it. In the use of this most important arm of the sanitary service the Medical Officer of Health finds himself at a loss, and embarrassed by being prevented taking the post due to his position, and concerning which there is elsewhere no question.

To the above summary of my report I may add further, that if any reason can be seen why the hospital should be conducted by a mixed committee, I have not the slightest

objection to become the officer of such a committee, provided the office offered me be that of supervisor of the hospital, and advisor to the committee.

Administration of Local and Adoptive Acts.

There have been two Cheltenham Improvement Acts. The first of these, dated 1852, is superseded by the Public Health Act, 1875, and other Acts. The later Cheltenham Improvement Act is dated 1889. This contains a number of useful provisions which are still from time to time in operation. The Notification of Infectious Diseases was made under this Act until the passing of the Act which made the requirement general. This Act also gives powers in connection with infectious diseases, for Cowkeepers and Milk Sellers, and for Laundries, to supply lists of customers under certain conditions, allows for dairies outside the borough to be inspected upon order of a Justice having jurisdiction in the outside district, and makes requirements as to disinfection, and disposal of dead bodies. The Act also contains a power to form a joint Committee of Management consisting of all or part of the Trustees of the Delancey Fever Hospital and any agreed number of Members of the Town Council. The Council has also power under this Act to contribute to the funds of the Cheltenham General Hospital capital sums for its enlargement, as approved by the Local Government Board, or such annual contributions for its maintenance, as they may think fit.

Two important sections which have been extensively applied are those which require the provision of a disconnected flushing apparatus with good supply of water to be affixed to every w.c., and the provision of a movable ash receptacle of pattern, size and construction approved by the Corporation, in every case where the existing ash receptacle is not in proper order and condition.

A large number of sections from Parts II., III., IV., V., of the Public Health Acts Amendment Act, 1907, have been adopted, giving power as to streets and buildings, and in various sanitary connections, and several of these have been put into force, notably one requiring each public-house to provide a urinal.

Bye-laws and Regulations in the connections mentioned below have been made and are in force in the Borough :

Dairies, Cowsheds and Milkshops.

Common Lodging Houses.
 Houses Let in Lodgings.
 Slaughter Houses, public and private.
 For Keeping of Animals.
 For Offensive Trades.
 For New Buildings.

Want of Chemical and Bacteriological Laboratory.

The Cheltenham Corporation are in occupation of incommodious and insufficient offices, and the subject of provision of new offices has on many occasions been considered and postponed during the last 20 years.

I have on several occasions represented to the Council that such a town as this should possess a good chemical and bacteriological laboratory, and the plans that have been prepared for the proposed building show a provision in this connection. At present there is only a small attic room available which is very difficult to work in, and harmful to health, and the work that is required in the borough cannot be done there. Formerly some amount of bacteriological work was attempted in this place, but this has latterly been dropped, excepting as to plate cultures of water bacteria.

Chemical analyses of samples of the potable water of the town as supplied from the various sources have, however, continued to be made up to this time, as for many years past, at regular periodical intervals of one month.

With the town converted into a County Borough, and with its own good laboratory, a reorganisation of all the chemical and bacteriological work required to be done for Cheltenham would be possible, including the examination of food materials for adulteration under the Food and Drugs Act.

The bacteriological examination of sputum and swabs, and Widal's blood tests, have been done gratuitously at the University College, Bristol, laboratories, under an arrangement with the County Council, and this arrangement has been distinctly assisting, a stock of outfits for transmission by post having been supplied me for use in the town whenever required. Of course, the use of this gratuitous provision has to be limited, as it could not be expected that an indefinite number of specimens would be examined in this way, nor, on account of the time taken up in conveyance, can results be obtained so quickly as if the work were done upon the spot.

Prevalence of and Control over Acute Infectious Diseases.

Zymotic Diseases in 1911.

If the record were restricted to those zymotic diseases which are notified under the Infectious Diseases (Notification) Act, one can report that during last year the incidence of these diseases was very light and considerably below the average taken all together. The death-rate from these diseases was also very low. It was in the non-notifiable diseases, Measles and Epidemic Diarrhœa, that we suffered so considerably, and which raised the zymotic death-rate to the, for us, high figure of 1·6 per 1,000 living.

In regard to notified zymotics, the only one of a serious nature showing excess over the average was Enteric or Typhoid Fever, in which the average annual notification for 20 years is 21, and last year there were 34 cases notified.

SCARLET FEVER.—This is the disease for which most notifications are usually received, and it headed the list last year, although the 77 cases notified make a very moderate showing, being little more than 50 per cent. of the average annual incidence during the previous 20 years. There was one death, the cases, as usual of late years, being of mild type for the main part. It is almost forgotten now how terrible a shape this disease was formerly wont to assume, and the alteration is one of the benefits attributed to better domestic sanitation, though the quick recognition of the disease by means of notification, and its segregation and careful treatment, have perhaps been even more effective in checking the number of cases occurring and lessening the virulence of the malady. To whichever reason the greater credit is really due, the actual fact of the reduction of Scarlet Fever is a very happy thing to contemplate. It is only fair to state, however, that hospital treatment of Scarlet Fever has been practised here with great thoroughness, and our experiences are quiet happy in regard to the advantage of isolating such cases in hospital.

DIPHTHERIA.—We are very fortunate in regard to this disease in having only 26 notified cases in all. It is 16 years since we had so few. The number doubtless could have been multiplied by a freer swabbing of sore throats, but I am well

content with the practice that resulted in just the 26 notifications. There was no death from diphtheria or croup during the year. Our hospital provision for diphtheria is of great value from the point of view of treatment and isolation of specially infectious cases.

ENTERIC OR TYPHOID FEVER.—There was a limited outbreak of this disease, but there was no continuance of the infection, and the whole number of 34 cases for the year is not extraordinarily excessive considering that it was a year in which more typhoid than usual was to be expected. The 4 deaths from this disease that occurred were exactly the same number as in the previous year, when there were but 8 cases notified.

The following table gives the notifications received in each month of the year for the several notifiable diseases, excepting phthisis, which is treated separately, and the number of each treated in hospitals.

ZYMOTIC DISEASES NOTIFIED in each month during 1911.							
Month.	Scarlet Fever.	Diphth- eria.	Enteric Fever.	Puerperal Fever.	Erysi- pelas.	Small- pox.	Totals.
January	5	2	1	...	...	...	8
February.....	4	5	...	...	3	...	12
March	5	3	2	...	3	...	13
April	4	3	...	...	5	...	12
May	8	3	1	...	2	...	14
June	6	...	...	...	3	...	9
July .....	...	1	...	...	...	...	1
August	11	...	17	...	...	...	28
September	3	3	10	...	1	...	17
October	19	3	2	...	8	...	32
November	10	2	...	...	6	...	18
December	2	1	1	...	3	...	7
The 12 months Totals	77	26	34	...	34	...	171
Total No. treated in Hospitals	67	13	17	...	...	...	99

Number of cases of Zymotic Disease notified in Cheltenham
since notification began.

Year	Scarlet Fever	Diphtheria	Enteric Fever	Puerperal Fever	Small-pox	Erysipelas
1890	93	16	24	2	...	...
1891	75	15	19	...	...	...
1892	264	10	10	...	...	...
1893	419	33	63	4	2	...
1894	147	26	27	1	3	...
1895	89	25	34	3	1	...
1896	126	60	26	4	22	...
1897	224	43	20	1	...	...
1898	296	52	23	5	...	...
1899	273	80	16	...	...	...
1900	103	74	32	1	...	21
1901	67	58	18	1	...	16
1902	147	63	18	3	1	19
1903	142	65	17	...	1	25
1904	143	59	7	...	...	25
1905	116	65	16	...	4	42
1906	104	61	24	6	1	37
1907	30	71	14	...	...	16
1908	79	53	12	1	...	20
1909	87	39	20	2	...	24
1910	81	90	8	2	...	27
1911	77	26	34	...	...	34
Average for all years	144	49	22	1.6	1.6	25

MEASLES.—This disease was epidemic, producing 34 deaths, of which 28 were at ages under 5 years.

EPIDEMIC INFANTILE DIARRHŒA.—This disease occurred to an excessive extent, owing to the hot and continued dry summer. It killed 37 children last year. This disease and Measles vie in being the most deadly of the zymotics, and together the two diseases were responsible last year for 71 out of the total of 79 deaths from the seven chief zymotic diseases that go to make up the zymotic death-rate. 34 out of the 37 children who died from diarrhœa and enteritis were under a year old, so here we have the chief cause of the heightened infantile mortality, as well as of the heightened death-rate for last year.

INFLUENZA.—There was much less influenza last year than for many years past, and that which occurred here was

of a milder nature. Up to Christmas of this present winter so few cases had occurred as to make it appear as if the long spell of dry weather had had some effect in putting the disease out of existence.

Vaccinations.

The number of successful vaccinations last year were 383, the births being 943. Ever since the passing of the Act which allows a conscientious objection to be successfully pleaded as an excuse against vaccination, the number of vaccinations performed have shown a steady regression, and the low proportion done last year as compared with the births, and which is indicative of what has been happening for some years past, will give an idea of the large number of unvaccinated children now existent in the borough. This would prove a very serious matter indeed if Small-pox should ever take a hold of this town as it did of the neighbouring city of Gloucester in 1896, when it caused 400 deaths.

Hospital Isolation of Infectious Diseases.

Such cases as the Medical Officer of Health judges to require to be isolated in hospital of Scarlet Fever, Diphtheria, Typhoid Fever and Small-pox are sent to the Delancey Fever Hospital, where accommodation is provided for these four diseases. The number of beds provided by this hospital for these diseases has so far proved sufficient, but the administration of the hospital being independent of the Medical Officer of Health is not satisfactory. This subject is more closely dealt with under the heading of Sanitary Administration at page 42.

School Intimations of Existent Diseases.

The intimations received from schools of the existence of disease have so far been somewhat haphazard. When the attendance has begun to fall off in a decided manner on account of such complaints as Measles or Whooping Cough, notice is sent to the office, when judgment has to be made as to the necessity of closing the schools. But there is a large non-attendance of children on account of illness during the whole year, a considerable proportion of which is of an infectious nature. These acute illnesses are quite separate from those usually chronic conditions discovered at the medical inspections. There requires to be a system by which

all such cases of illness should be enquired into and reported. But no such system could be worked without the assistance of a trained nurse, working either for the Health Department or the Education Committee, under the general direction of the Medical Officer of Health, who should also be School Medical Officer. In the latter capacity I have made for several years strong and repeated representations to this effect to the Education Committee, who appear to hesitate to engage a nurse, or nurse-attendance officer, for this purpose, on grounds of economy, although the loss in grant money incurred on account of absentees who might be at school is probably far greater than the salary of £80 required to be paid to such an officer, not to mention the prevention of the spread of infectious disease that such an officer might effect. When such an officer is appointed the whole business can be organised, but not before.



Prevalence and Control over Tuberculosis.

Notifications of Tuberculosis.

From May 1st of last year there came into force the regulations requiring notifications of all cases of pulmonary tuberculosis occurring in hospital and dispensary practice. Previously, compulsory notification of phthisis had been limited to cases occurring in poor law practice. A voluntary system of notification had, however, been in operation here for some years, though it had proved successful in but slight degree.

During the year 1911 there were notified 81 new cases of phthisis under the above regulations as follows :—

Under Regulations 1908 (Poor Law cases)	...	28
Under Regulations 1911 (Hospital cases)	... ..	25
Voluntarily notified private cases	... ..	25
Notified from outside districts as belonging here and not included in above	... ..	3
<hr/>		
Total cases notified	... ..	81
<hr/>		

Of these 81 cases notified within the year 1911, 25 are known to have died up to date of writing.

25 of the 81 cases notified were either notified as being inmates of institutions or are known to have gone into institutions as follows :—

In Cheltenham Workhouse Infirmary	...	...	10
In Cheltenham General Hospital	...	...	2
The Winsley Sanatorium	...	...	8
Chest Hospital, St. Leonard's	..	...	1
Institution at Torquay	...	...	2
Brompton Hospital	...	...	1
Institution in Devonshire	...	....	1
			—
			25
			—

Work Done and Required in connection with Tuberculosis.

Visits were paid to the homes of those notified under the regulations, so far as it could be done, and cards of instructions and spitting bottles were supplied, and notes as to family and personal history obtained in cases where it could be done, whether by visits or by communication with the notifying practitioner. Disinfection was also performed after death or removal in a good many instances, and we have here the means of effective disinfection of carpets, bedding, clothing, &c., by steam, and are consequently in a much better position to deal with the matter than is the case in the rural and minor urban districts.

At the beginning of the current year the further order requiring the notification of every case of pulmonary tuberculosis came into operation, and the required notification forms were promptly supplied to medical practitioners with notice of the legal requirement, and we have now knowledge of all diagnosed cases of phthisis that exist in the district.

To effectively deal with these cases for any good effect, and to keep in touch with them, requires more attention than is possible with the staff at command, and under the heading of Sanitary Administration upon another page I have called attention to what is required in this connection.

The Local Government Board has sent a form for a tabular statement of what is being locally done in this direction in the way of definite provisions for treating phthisis in sanatorium

or hospital. This form has had to be returned blank, as the Town Council of Cheltenham up to the present time has not made any provision for treatment of tuberculous cases either by sanatorium, hospital, or dispensary. There are now known to us a number of cases that badly want assistance in respect of treatment, and tuition as to best mode of life. Some are suitable for attempt at cure by sojourn in a sanatorium ; some are hopelessly incurable and require institutional seclusion and treatment ; others would benefit by advice and treatment at a dispensary for the purpose, where they could be provided gratuitously, or at economical cost as their position might require it, necessary medicaments, and demonstrations of how they should conduct themselves for their own betterment and the safety of those with whom they may be living. The matter has been brought before the Public Health Committee here for discussion on several occasions, the last time being quite recently, when the Government provision in this connection promised by the Insurance Act, which should come into operation within a few months, was preventive of any proposal for the expenditure of local public money being entertained. And this, presumably, will be the general effect throughout the country, as until the promised million-and-a-half has been distributed, the disinclination on the part of the local Council to embark upon independent schemes is but natural.

The most effective of minor measures for the prevention of tuberculosis lies in the advocacy and practice of free ventilation of apartments by open windows, and the benefit of fresh air in maintaining good health is now fortunately receiving a wide recognition. The general agitation in connection with tuberculosis is likely to have a good effect, even of itself, by opening the eyes of the public to the presence and importance of this disease, and is likely to lead to the more effective measures against it being adopted. It is, however, an exaggeration to pretend that any means available can put tuberculosis out of existence within a short time.

Investigation of other Diseases.

During last year the health of the district was not affected by any great adverse influence. Under another heading I have mentioned the incidence and effect of the chief zymotic diseases during the year, and in connection with them numerous enquiries and investigations into cases as they arose were required.

Typhoid Fever.

There was a small outbreak of Typhoid Fever apparently due to some infection which acted during a very short period, and resulted in a sudden though quite limited outburst of the disease. In the months of August and September of the late hot and continuously dry summer we received 27 notifications, and there were two or three later cases which were probably not of the same origin, whilst three others were heard of as occurring outside the town but which were probably contracted here at the same time as the main number of our own cases. The sudden receipt of a batch of notifications of any zymotic disease is naturally a cause of anxiety, and also of instant enquiry as to possible cause and preventive action, with a view of putting an end to the outbreak. The great value of compulsory notification is made evident upon such occasions, and has often, here as elsewhere, been the means of averting an epidemic. In the instance of the occurrence of these typhoid cases, suspicious circumstances were discovered, and action taken instantly to prevent extension.

Measles.

We had yet another serious epidemic of Measles which began in the early part of last year, and ran on much farther into the summer than is usual, as in former epidemics the month of April usually saw a decided and sudden abatement of case occurrence. Last year the infection lingered, attacking new districts up to and beyond midsummer. The capricious behaviour of these constantly recurring epidemics is curious and not well understood. The sudden way the disease will sometimes die out, irrespective of more or less ready material for its continuance, is noticeable and baffling of enquiry. The infection in our epidemic of last year was insidious and for a season continuous and wide spreading. It progressed definitely from locality to locality, the town not being attacked

all together at the same time, but part by part. Thus it appears that the infection takes a considerable time to spread, being itself largely localised, and not readily conveyed by the air or by intermediaries. Its definite duration in the patient, and definite and final subsidence, makes it in this respect analagous to Small-pox, and is highly promising of effective prevention by isolation if it were possible to hear of the cases in their earliest stage and isolate them in hospital. Against this possibility is the very infectious nature of the disease in its first stages. It is freely stated that the premonitory sign of running at eyes and nose points to an infectious state. Compulsory notification of Measles has not answered expectations where it has been tried, but in conjunction with notification in those places there has been no adequate hospital isolation, and consequently no control of the disease. Simply to learn that cases exist, without any practice of segregating the sick, is hardly likely to be effective in preventing Measles, though it might lead to fewer deaths occurring by a timely warning of the dangerous nature of this disease to child life, and the necessity of good nursing in all cases. Public-health measures, in fact, have not hitherto been very effective upon Measles, either in limiting the number of cases or preventing deaths. The schools last year, as in previous epidemics of Measles, were an undeniable source of extension and a danger to life, especially to children under 5 years of age. So marked is this the case, and so frequent are Measles epidemics, as to require the limit of age for commencing school to be at least as high as 5 years, the greater danger to the life of the child from this cause being greater below 5 years of age, excepting for the first 6 months of life, during which there seems little liability to develop it.

Epidemic Infantile Diarrhoea.

This is the most serious cause of infant deaths amongst zymotic diseases. The prolonged hot, dry weather of such a summer as that of last year is always productive of an increased death-rate from this disease among infants. The cause must be the increase of the germs of the disease in the matter in which these find an easy place of development. One is not absolutely certain where these germs are chiefly located. The condition of the soil and subsoil and the varying height of the underground water level was formerly thought to be

concerned in the production of infantile diarrhœa in dry summers. The presence of filth in conjunction with flies has been more recently mentioned as a likely source, the introduction of the germs into the body being by means of infected milk and other articles of food upon or into which the flies may settle or fall, after settling upon the filth. I am not sure whether this is sufficient to explain the greater number of deaths, or the greater prevalence of the disease, which happens invariably in hot, dry summers. Last summer diarrhœa of a severe type was for a time prevalent even among adults, and nothing certain can be said as to the direct cause, the recurrence of which we expect at the return of such exceptional seasons. This applies not alone to Cheltenham. The diarrhœa of last summer was widespread, and many towns suffered more than ourselves. The chances of escape from death from infantile diarrhœa are infinitely greater in well-conducted houses than in the dirty houses of the neglectful poor, where infant feeding is often badly done and with improper diet, and it is not so much that a child cannot be quite successfully reared when artificially fed, as on account of the insufficient, improper, and careless artificial feeding in poor houses, that the natural mode of rearing by suckling the child is so well worth advocating as a preventive of infant death from this disease.

Last summer a large number of hand-bills were distributed in the poorer quarters, in accordance with the advice of the Local Government Board, admonitory of the dangers of infantile diarrhœa and the means of prevention.



Means for Preventing Mortality in Childbirth and in Infancy.

Early Notification of Births Act not Adopted.

The Early Notification of Birth Act has not been adopted here, but its adoption has been recommended. No systematic action has been taken by the Health Department here, in the absence of any officer to do the work, in connection with the

prevention of Infant Mortality. A small voluntary society is existent in the town that interests itself in such work. A crèche consisting of two branches has existed here for many years and has done good work in taking charge of babies in the absence of their mothers during the day.



Vital Statistics.

SUMMARY.

						ACRES.
Acres of Municipal Borough	...	...	...	...	...	4,726
Rateable Value	...	...	...	...	...	£315,893
Population at middle of last year	...	...	...	...	...	49,200
Population in 1911 Census	...	...	...	...	...	48,944
Persons per Acre in the Borough at Census 1911						10·3
Death-Rate, 1911	...	...	...	Per Thousand Living	Inhabitants	14·1
Average Death-Rate for previous						
ten years	...	...	...	„	„	14·0
Zymotic Death-Rate for 1911	...	...	...	„	„	1·60
Average Zymotic Death-Rate for						
previous ten years	...	...	...	„	„	·85
Birth-Rate, 1911	...	...	...	„	„	19·0
Average Birth-Rate for previous						
ten years	...	...	...	„	„	19·0
Infant Death-Rate (under one year old) per						
Thousand Births, 1911	...	...	...	...	...	127
Infant Death-Rate Average for previous ten years						
per Thousand Births	...	...	...	...	...	105

BIRTHS AND THE BIRTH-RATE.—The number of births registered in Cheltenham last year was 943. The Registrar-General supplied information showing that the numbers had to be very slightly modified by the addition of 1 birth belonging here that took place outside the district, and the subtraction of 7 that took place here but belonged to other places. The nett number of 937 births gives a birth-rate per thousand of the population of 19 as compared with 24·4 for the whole of England and Wales. The birth-rate of 19 for last year was also the average birth-rate for the previous ten years in Cheltenham.

The illegitimate births were last year in greater proportion than usual, being 75 in number, this being a little over 8 per cent. of all births.

THE INFANT DEATH-RATE.—The infant death-rate was last year 127 per thousand children born, against the very low rate of 68 of the previous year, and the average for the last 10 years of 105. Amongst illegitimate infants it was 173 per thousand born.

The rise in the rate was chiefly due to accidental circumstances in part related to the exceptionally dry and hot summer, which led to 34 infant deaths from epidemic diarrhœa or enteritis, whilst there were over 40 deaths from apparent deficiencies traceable to the condition at birth, premature birth, debility, marasmus, &c. A few of these may have had connection with improper feeding and want of good nursing, but the majority were doomed from the beginning to but a brief existence. There must always be such deaths, though the proportion last year was too high for uncertain reasons. The epidemic of Measles by which the town was visited caused a large death-rate, but this was chiefly in children of higher age. It is well known that in the first few months of life there is little liability to be affected by zymotic rash-diseases excepting small-pox and ~~chil~~ children-pox.

It therefore appears to have been an unpropitious year for infant life, and such years are likely to occur, though they need not prove disheartening to those who are endeavouring to assist in preventing infant deaths occurring as the result of bad feeding and lack of attention. The larger death-rate amongst illegitimates should cause a greater attention to be paid to these infants by those who are working with the above intent, as they, from not being desired, suffer most from bad nursing, and die most frequently, as the statistics show, leaving, however, so many alive as to form a considerable proportion of the adult population. A large number of illegitimate persons must be met in walking through the High Street on a Saturday evening for example, considering that to begin with one in every 13 born is illegitimate, which means a much higher proportion if the quotation were limited to the working class, as it is with the daughters of that class almost exclusively that illegitimate births occur. This does not appear to be due to a greater degree of immorality in the poor as compared with the rich, but rather to the dependant position and circumstances of domestic servants and others.

TOTAL DEATHS AND THE GENERAL DEATH-RATE.—Last year the Registrar-General started a system of referring to their proper districts of usual residence the deaths of persons occurring away from these districts, and this resulted in a number of deaths being referred here of persons who died elsewhere, chiefly in the Gloucestershire Lunatic Asylums. On the other hand, a number of persons died in Cheltenham who had not here their usual residence, nearly all having come from surrounding districts into our institutions, particularly into the General Hospital and the Workhouse Infirmary. Thus the deaths registered as having occurred in Cheltenham were subjected to an addition and subtraction of the deaths referred here or away from here, and a nett number was in this way obtained, accurately representative of the deaths belonging to this district for the year. Thus there were 712 deaths registered in the district, and the nett number really belonging to the district was $712 + 23 - 39$ or 696. Upon a population of 49,200 this gives a death-rate of 14·1 per 1,000 living. This is almost identical with the average general death-rate for the previous 10 years, but if the census enumeration of last year be correct we have for some years past been reckoning our death-rate on a slightly too large population, and reckoned upon the same basis as before the death-rate of last year would be below the average.

THE DEATH-RATE FROM ZYMOTIC DISEASES.—The Measles epidemic, followed by the epidemic diarrhœa of the hot summer, caused a much heightened zymotic death-rate last year, the figure being 1·60 per 1,000 living inhabitants for the seven chief zymotic diseases. The 89 deaths under this heading really resulted from only five of the seven diseases, and of the 89, 68 were in children under 5 years of age. For more information upon the Zymotic Diseases see another page.

DEATH-RATE FROM PHTHISIS OR PULMONARY TUBERCULOSIS.—This gave a death-rate last year of 1·19 per 1,000 population, which is considerably in excess of the average rate. The hot weather was undoubtedly fatal to chronic cases causing greater difficulty of respiration and apparently otherwise accelerating the morbid processes. In another place in this report a summary of the action taken in connection with the notification of this disease will be found.

DEATH-RATE FROM CANCER.—The death-rate of 1·38 per 1,000 of population for this disease was also above the average. This figure is above the average for the whole country, but requires correction for the peculiarity of our population in the matter of age and sex distribution. That is, having an unusual number of persons over 50 years of age in our population and an unusual number of women, both of which circumstances result in more cancer cases relative to the population, a higher death-rate from this disease must be expected here than in the country generally.

DEATH-RATE FROM RESPIRATORY DISEASES (pneumonia, bronchitis, pleurisy, &c.)—The death-rate of ·87 per 1,000 of population for all these together is quite low and well below the average for the town. In this case the meteorological conditions of the past year were propitious, especially the very mild winter of 1911-12, and the comparative absence of influenza, which has often been the primary though perhaps unrecognised cause of many deaths from pneumonia and bronchitis.

Table of Statistics for the last 10 years, showing Deaths from Chief Zymotic Diseases, and Zymotic Death-rate, and Total Deaths and General Death-rate; also Total Births and Birth-rate per 1,000 of population, and (under 1 year old) Infant Death-rate per 1,000 children born.

	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
	49,700	50,500	50,500	50,500	51,000	51,000	51,000	51,500	51,500	49,200
Small Pox ...	1	...	...	...	...	...	...	...	...	...
Measles ...	15	...	...	30	7	...	...	47	...	34
Scarlet Fever ...	2	2	3	1	1	...	...	...	...	1
Diphtheria ...	10	3	3	6	9	7	1	3	3	...
Whooping Cough ...	8	5	3	11	1	7	3	5	9	3
Enteric and Continued Fevers ...	2	3	2	2	1	2	2	2	4	4
Diarrhoea, Enteritis, &c., in Young Children ...	13	16	39	24	16	15	16	21	9	37
Total Deaths from seven chief Zymotics...	51	29	50	74	35	31	22	78	25	79
Death-rate from Chief Zymotics ...	1.02	.57	.99	1.46	.68	.60	.43	1.51	.49	1.60
Total Deaths belonging to District ...	715	643	714	747	711	708	641	784	624	696
General Death-rate ...	14.3	12.7	14.1	14.8	13.9	13.8	12.5	15.2	12.1	14.1
Total Births ..	945	1062	961	995	975	881	955	949	926	937
Birth rate ...	19.0	21.0	19.0	19.7	19.1	17.2	18.7	18.4	18.0	19.0
Infant Death-rate per 1,000 Children born ...	120	85	133	131	100	95	90	119	68	127

Ward Statistics.

The town is divided into six wards which present considerable differences in class of population and vital statistics. The birth-rate and the death-rate are both higher in the poorer wards, the increase in death-rate as compared with the richer wards being in large part due to the increase in infant deaths.

The result of the census has not yet been received in detail, and the uncertainty of the population of the several wards is such as to prevent any estimation of death-rates. The North Ward, however, shows a great excess of deaths over those that took place in either of the other wards, and must have a correspondingly high death-rate. In regard to births, nearly one-third of all the births of the town took place in this poorest ward, and a good deal more than one-third of the deaths of infants under 1 year old. I have on former occasions remarked upon the fact that a vast proportion of the births that take place in this town occur in small houses, and notwithstanding the high death-rate, the natural increase last year, or surplus of births over deaths, was much higher in the North Ward than in any other ward, being more than in the West, Central and Middle put together.

Vital Statistics of the Six Wards, 1911.

	North Ward.	South Ward.	East Ward.	West Ward.	Central Ward.	Middle Ward.
Deaths	195	104	109	65	88	106
Births	307	143	161	95	114	123
Infant deaths	51	11	22	10	14	10

Vital Statistics for Cheltenham and for the whole country, 1911.

	Annual Rates per 1,000 living.		Infant Death-Rate (under 1 year old) per 1,000 births.
	Birth-Rate.	Death-Rate.	
England and Wales	24·4	14·6	130
77 Greater Towns... (including London)	25·6	16·4	140
136 Smaller Towns...	23·4	14·4	133
Cheltenham	19·0	14·1	127
England and Wales (less 213 Towns)	23·4	13·1	118
London	25·0	15·8	128

Deaths in Institutions.

THE GENERAL HOSPITAL.—Injuries by motar car 41, gall stones 70, nephritis 45, cystitis 76, apoplexy 74, 59, phthisis 35, 46, 10 months 22, 10, enlarged prostrate 66, burns self-inflicted 46, bronchitis 68, 66, 2 months, tubercular meningitis 11, 18, cancer 50, 58, 40, 79, 63, 40, 61, 64, 50, 60, 41, diabetes 64, 23, broncho-pneumonia 2, gangrene 69, impetigo and septicæmia 6 months, 15 months, measles 2, heart disease 58, 63, 46, 17, general tuberculous 39, 2 months, stricture of urethra 59, 51, cholecystitis 44, purpura 2, hæmophilia 12, mastoiditis 2, appendicitis 20, 8, cerebral tumour 37, perforated duodenal ulcer 51, pneumonia 56, 21 months, tubercular disease of hip 53, peritonitis 48, marasmus 29 days, 1 month, 4 months, 8 months, 6 months, aneurism 31, post partrum hæmorrhage 47, Ludwig's angina 44, ruptured intestine 78, pleurisy 28, 30, leukæmia 27, tubercular intestine 4 months, pneumo-coccal peritonitis 5, cirrhosis of liver 36, congenital stenosis of pylorus 2 months, tabes mesenterica 7 months, burns and shock 4, knocked down by train 48, pancreatitis 57, tubercle in mediastinum 24, oxalic acid poisoning 45, uræmia 22, cerebral abscess 50.

UNION INFIRMARY.—Cancer 73, 68, 66, 76, 54, 65, 49, 67, pneumonia 75, 56, 59, nephritis 64, 67, 69, pernicious anæmia 67, alcoholism 56, 59, 52, phthisis 24, 46, 66, 44, 42, 35, apoplexy 68, 66, 73, 70, 68, 68, 74, heart disease 73, 69, 51, 37, 60, 68, broncho-pneumonia 57, 11 months, senile decay 78, 80, 77, 80, 72, 81, 75, 70, 79, 87, 73, 71, 62, 80, 77, hemiplegia 56, periveal abscess 72, gangrene of foot 81, general paralysis 59, paralysis agitans 61, rheumatoid arthritis 50, debility 5 days, 8 days, locomotor ataxy 50, lead poisoning 55.

DELANCEY HOSPITAL.—Scarlet fever 5, septic tonsillitis 20 months, pyorrhæa alveolaris 69, enteric fever 57.

HOME FOR SICK CHILDREN.—Tabes mesenterica 21 months, phthisis 7, 13 months.

ROYAL PARADE NURSING HOME.—Gastric ulcer 55, influenza 40, appendicitis 52.

CENTRAL SPA NURSING HOME.—Heart disease 74, phthisis 59, gastric ulcer 35, cancer 63.

EYE, EAR AND THROAT HOSPITAL.—Middle ear disease 29, necrosis of jaw 38.

VICTORIA NURSING HOME.—Atalectasis 4 days.

NAZARETH HOUSE.—Phthisis 13, heart disease 64, senile decay 90, 66, 79.

HAY'S COTTAGE HOMES.—Atheroma 65.

Deaths Registered in Cheltenham belonging to Outside Districts.

The following deaths were registered in Cheltenham and were marked in the death returns received from the Registrar as belonging to outside places. Of the 39, 35 took place in institutions and 4 only in houses.

Place of death.	Place of usual residence.	Disease and age.
Cheltenham Gen. Hospital	...Andoversford	...cystitis 76
"	...Withington	...general tuberculosis 39
"	...Swindon	...apoplexy 74
"	...North Cerney	...cerebral tumour 67
"	...Cubberley	...purpura 2
"	...Dowdeswell	...stenosis of pylorus 2 m.

Cheltenham Gen. Hospital	...Broadway	...diabetes 23
„	...Northleach	...tubercular disease of hip 53
„	...Shurdington	...urethral stricture 51
„	...Charlton Kings	...aneurism 31
„	...„	...ruptured intestine 78
„	...„	...duodenal ulcer 51
„	...„	...marasmus 8 months
„	...Andoversford	...leucæmia 27
„	...„	...heart disease 46
„	...Overbury	...impetigo & septicæmia 15 months
„	...Lee,nr.Cheltenham	cancer 50
„	...Staverton	...uræmia 22
Cheltenham Workhouse		
Infirmary	...Charlton Kings	...senile decay 78
„	...„	...gangrene of foot 81
„	...„	...senile decay 70
„	...„	...senile decay 79
„	...The Reddings	...pneumonia 75
„	...Prestbury	...heart disease 69
„	...„	...cancer 49
„	...Swindon	...apoplexy 74
„	...Clifton, nr. Manchester	...phthisis 35
„	...Cubberley	...heart disease 37
Delancey Fever Hospital	.. Charlton Kings	.. pyorrhæa alveolaris 69
Nazareth House	...Darlington	...senile decay 66
„	...Chipping Campden	heart disease 64
Eye, Ear and Throat Hospital	...Tewkesbury	.. middle ear disease 29
„	...Twynning	...necrosis of jaw 38
Central Spa Nursing Home	...Wolverhampton	...phthisis 59
Royal Parade Nursing Home	...Tilehurst	...influenza 40
Royal Crescent	...Ramsgate	...uterine tumour 60
Fairview Road	...Brixton	...diarrhœa 5 months
Albert Place	...Manchester	...amputation of leg 53
Whaddon Lane	...Swadlincote	...broncho-pneumonia 74

Deaths Registered in Outside Districts belonging to Cheltenham.

The following 23 deaths took place outside of Cheltenham, but have been assigned to us by the Registrar-General as having their usual residence here. Of the 23, 18 at least were mental cases, being certified as having taken place in asylums, 17 of them being in the Gloucestershire asylums of Barnwood and Wotton. I have in each instance given the immediate cause of death without reference to their mental state. There is a large proportion of deaths from pulmonary tuberculosis, as is usual in asylum cases, and which has been taken to prove some relationship between insanity and tuberculosis. The causes of death and ages at death were as follows:—

In Wotton Asylum: Pancreatitis 43, tubercle of lungs 18, 23, 34, cerebral hæmorrhage 58, 70, cerebral tumour 64, senile decay 88,

77, endocarditis 66, general paralysis 40, fatty heart 68, 72, 65,
acute hæmorrhage 65.
In Barnwood Asylum: Tubercle of lungs 52.
In Cheadle Asylum: Nephritis 56.
Ventnor: Pulmonary tuberculosis 38.
Gloucester Workhouse: Senile decay 90.
Hampstead: Pulmonary tuberculosis 17.
Grantham R.D.: Anorexia nervosa 45.
Ogwen R.D.: Sunstroke 66.
Hartlepool: Premature birth 30 minutes.

Deaths Certified by Coroner after Inquests in 1911.

Accident by shooting	...	...	...	...	...	1
„ suffocation in bed with parents	...	...	...	...	...	2
„ burns	...	...	...	...	...	1
„ poisoning	...	...	...	...	...	1
„ being knocked down by electric cable	...	...	...	...	...	1
„ „ „ motor car	...	...	...	...	...	1
„ „ „ passing train	...	...	...	...	...	1
Asphyxia, due to congenital weakness	...	...	...	...	...	1
Cerebral hæmorrhage	...	...	...	...	...	1
Gastric enteritis	...	...	...	...	...	1
Heart disease, heart failure, syncope	...	...	...	...	...	7
Inflammation of the brain	...	...	...	...	...	1
Murder (laceration of brain)	...	...	...	...	...	1
Pericarditis and endocarditis	...	...	...	...	...	1
Pneumonia	...	...	...	...	...	2
Pulmonary embolism	...	...	...	...	...	1
Rupture of the uterus	...	...	...	...	...	1
Suicide by burns and refusal to take nourishment	...	...	...	...	...	1
„ wounds self-inflicted	...	...	...	...	...	1
„ hanging	...	...	...	...	...	1
„ shooting	...	...	...	...	...	1
„ suffocation from gas	...	...	...	...	...	1
Want of attention at birth	...	...	...	...	...	1
						31

Deaths not Certified in 1911.

Asphyxia, age 30 minutes	...	...	...	...	...	1
Angina pectoris, age 74	...	...	...	...	...	1
Congenital debility, ages 30 minutes, 1 day	...	...	...	...	...	2
						4

Local Government Board Table No. I.—Vital Statistics of whole District of the Borough of Cheltenham during 1911 and previous years.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS.		NETT DEATHS BELONGING TO THE DISTRICT.		
		Uncorrected Number.	Nett.		Number.	Rate.	of Non-residents registered in the District	of Residents not registered in the District	Under 1 Year of age		At all Ages
			Number.	Rate.					Number.	Rate per 1,000 Nett Births.	
1906	51,000	975	...	19.1	743	14.5	32	...	98	100	711 13.9
1907	51,000	881	...	17.2	738	14.5	30	...	84	95	708 13.8
1908	51,000	955	..	18.7	672	13.2	31	...	86	90	641 12.5
1909	51,500	949	...	18.4	814	15.8	30	...	113	119	784 15.2
1910	51,500	926	...	18.0	639	12.4	32	17	63	68	624 12.1
1911	49,200	943	937	19.0	712	14.5	39	23	119	127	696 14.1

Area of District in acres (exclusive of area covered by water)	4,726	Total population at all ages.....	48,944	} At Census 1911
		Number of inhabited houses not yet known		
		Average No. of persons per house	„	

Local Government Board Table II.—Cases of Infectious Disease notified during the year 1911
for the Borough of Cheltenham.

NOTIFIABLE DISEASES.	Number of Cases Notified.								Total Cases notified in each Locality.						Total cases removed to Hospital.
	At all Ages	Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 & upwards.	North Ward.	South Ward.	East Ward.	West Ward.	Central Ward.	Middle Ward.	
Diphtheria (including Membranous Croup)	26	...	6	9	8	2	1	...	6	11	2	2	4	1	13
Erysipelas	34	2	1	4	3	10	8	6	11	3	3	2	10	5	2
Scarlet Fever	77	...	12	55	7	3	...	...	19	13	11	17	9	8	67
Enteric Fever	34	...	1	9	9	10	3	2	7	5	6	7	7	2	17
Under Tuberculosis Regulations, 1908	28	...	...	2	4	7	14	1	18	4	1	...	5	...	...
	25	1	...	3	7	8	6	...	9	5	6	1	3	1	2
Under Tuberculosis Regulations, 1911	8	...	...	...	2	6	...	...	3	1	2	2	...	...	8
	25	...	...	...	6	14	4	1	5	3	8	3	3	3	...
Totals ...	257	3	20	82	46	60	36	10	78	45	39	34	41	20	109

Isolation Hospital -Delancey Fever Hospital, within the District. Total available beds, 70. No. of Diseases that can be concurrently treated, 4.

Local Government Board Table III.—Causes of, and Ages at, Death during Year 1911 in the Borough of Cheltenham.

CAUSES OF DEATH.	Nett deaths at the subjoined ages of "Residents" whether occurring within or without the District.								Total Deaths in Institutions in District	
	All Ages.	Under 1.	1 and under 2.	2 and under 5.	5 and under 15.	15 and under 25.	25 and under 45.	45 and under 65.		65 and upwards.
Enteric Fever	4	...	...	...	1	1	1	1	...	1
Measles	34	5	14	9	5	1	...	...	...	1
Scarlet Fever	1	...	...	...	1	...	...	...	...	1
Whooping Cough	3	3	...	...	...	...	...	...	...	...
Influenza	3	...	1	...	...	...	...	...	2	1
Erysipelas	1	1	...	...	...	...	...	...	...	...
Pyæmia Septicæmia	1	...	1	...	...	...	...	...	...	1
Lead Poisoning... ..	2	...	...	...	...	...	...	...	...	...
Phthisis (Pulmonary Tuberculosis)	59	1	1	...	2	15	26	12	2	...
Tuberculous Meningitis	7	2	1	1	2	1	...	...	...	2
Other Tuberculous Diseases	8	3	1	...	1	1	...	...	...	6
Cancer, Malignant Disease	68	...	...	...	...	...	7	29	32	20
Bronchitis	36	2	1	...	...	...	...	3	30	3
Broncho-pneumonia	15	6	1	3	...	...	2	1	2	3
Pneumonia (all other forms)	21	2	4	1	1	1	2	4	6	4
Other Diseases of the Respiratory Organs	8	...	...	...	...	...	3	4	1	2
Diarrhoea and Enteritis	37	34	2	1	...	...	...	...	...	...
Appendicitis and Typhlitis	3	...	...	...	1	1	...	1	1	3
Alcoholism	8	...	...	...	...	...	1	6	1	...
Cirrhosis of Liver	3	...	...	...	...	...	1	2	...	3
Nephritis and Bright's Disease	19	...	...	1	...	...	2	6	10	1
Other Accidents and Diseases of Pregnancy and Parturition	2	...	...	...	...	...	1	1	...	...
Congenital Debility and Malformation, including Premature Birth	42	42	...	...	...	...	...	...	...	5
Violent Deaths, excluding Suicide	12	5	...	1	...	1	2	2	1	4
Suicides	5	...	...	...	...	2	...	2	...	1
Senile Decay	68	...	...	...	...	...	...	2	66	18
Other Defined Diseases	226	12	1	3	2	2	13	75	119	68
Totals	696	117	28	20	16	26	63	154	272	167*
Uncertified Deaths ... ..	...	3	...	...	...	...	...	...	1	4

* Of the 92 deaths in the above table, 18 were in Asylums, being institutions outside the district.

Local Government Board Table IV.—Infantile Mortality during the Year 1911 in the Borough of Cheltenham.

Nett deaths at stated causes at various ages under 1 year of age, 1911.

CAUSE OF DEATH.	Under 1 week	1-2 weeks	2-3 weeks	3-4 weeks	Total under 1 month	1-3 months	3-6 months	6-9 months	9-12 months	Total Deaths under 1 year
Measles ... ..	...	...	...	...	...	...	...	4	1	5
Whooping Cough ... ..	...	...	...	...	...	1	...	...	2	3
Diarrhoea and Enteritis ... ..	...	1	2	...	3	7	12	11	1	34
Tuberculous Meningitis ... ..	...	...	...	...	...	...	2	...	...	2
Abdominal Tuberculosis ... ..	...	...	...	...	...	...	1	1	...	2
Other Tuberculous Diseases ... ..	...	...	...	...	...	1	1	...	...	2
Congenital Malformation... ..	...	...	...	...	1	...	1	...	...	2
Premature Birth	12	...	...	...	12	2	1	...	...	15
Atrophy, Debility, Marasmus, and Malnutrition	7	1	...	1	9	8	7	1	...	25
Atelectasis	3	...	...	...	3	...	...	...	...	3
Erysipelas ... ..	...	...	...	...	...	1	...	...	...	1
Rickets ... ..	...	...	...	...	...	...	1	...	...	1
Convulsions ... ..	...	...	...	1	1	...	1	...	1	3
Bronchitis ... ..	...	...	...	...	...	1	...	1	...	2
Pneumonia (all forms) ... ..	...	...	...	...	...	1	4	1	2	8
Suffocation, overlying ... ..	...	...	...	1	1	...	1	...	...	2
Other Causes	5	...	...	1	6	...	...	...	1	7
Totals	28	2	2	4	36	22	32	19	8	117
Uncertified Deaths	3	...	...	...	3	...	...	...	...	3

Births in the year :—Legitimate, 862 ; Illegitimate, 75. Deaths in the year :—Legitimate infants, 104 ; Illegitimate, 13.

(Nomenclature and arrangement according to the International List).

CAUSES OF DEATH.	AGES AT DEATH.								Total at all Ages.
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 45	45 to 65	65 to 75	75 and upwards	
I.—GENERAL DISEASES.									
Enteric Fever			1	1	1	1			4
Measles	5	23	5	1					34
Scarlet Fever			1						1
Whooping Cough	3								3
Influenza		1					1	1	3
Dysentery								1	1
Erysipelas	1								1
Pyæmia, Septicæmia		1							1
Pulmonary Tuberculosis	1	1	2	15	26	12	2		59
Acute Miliary Tuberculosis	1								1
Tuberculous Meningitis	2	2	2	1					7
Tuberculosis of Peritoneum & Intestines	2	1	1			1			5
Tuberculosis of other organs				1	1				2
Rickets	1								1
Cancer					7	29	32		68
Chronic Rheumatism						1	1	1	3
Diabetes						3	1	2	6
Exophthalmic Goitre						1			1
Anæmia, Chlorosis						5	2		7
Other General Diseases... ..	1		1			1		1	4
Alcoholism					1	6	1		8
Chronic Lead Poisoning						2			2
II.—DISEASES OF THE NERVOUS SYSTEM.									
Encephalitis						1			1
Meningitis							1		1
Locomotor Ataxy						1			1
Other Diseases of Spinal Cord... ..					1	1	2		4
Cerebral Hæmorrhage, Apoplexy						10	18	12	40
Softening of Brain								1	1
Paralysis without specified cause						2	1	1	4
General Paralysis of the Insane					1	2			3
Epilepsy				1					1
Convulsions (5 years and over)... ..							1		1
Infantile Convulsions	3	2							5
Hysteria (anorexia)						1			1
Other Diseases of Nervous System						2			2
Disease of the Ear (Mastoid)		1							1
III.—DISEASES OF THE CIRCULATORY SYSTEM.									
Acute Endocarditis						1			1
Organic Disease of Heart	1			2	6	28	28	12	77
Angina Pectoris							3		3

CAUSES OF DEATH.	AGES AT DEATH.								Total at all Ages.
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 45	45 to 65	65 to 75	75 and upwards	
CIRCULATORY SYSTEM— <i>continued.</i>									
Diseases of Arteries							1	6	7
Embolism and Thrombosis					1				1
Status Lymphaticus	1								1
Hæmorrhage							1		1
IV.—DISEASES OF THE RESPIRATORY SYSTEM.									
Bronchitis	2	1				3	12	18	36
Broncho-Pneumonia	6	4				2	1	2	15
Pneumonia	2	5	1	1	2	4	2	4	21
Pleurisy					2	2			4
Asthma					1	1			2
Pulmonary Emphysema								1	1
Other Diseases of Respiratory System						1			1
V.—DISEASES OF THE DIGESTIVE SYSTEM.									
Tonsillitis... ..		1							1
Ludwig's Angina					1				1
Perforating Gastric Ulcer					2	1	1		4
Other Diseases of Stomach						1	1		2
Diarrhœa and Enteritis... ..	34	3						1	38
Appendicitis			1	1		1			3
Hernia, Intestinal Obstruction... ..							3	2	5
Cirrhosis of the Liver					1	2			3
Biliary Calculi							1		1
Other Diseases of the Liver					1	3	2		6
Peritonitis			1			1			2
Other Diseases of Digestive System ...					1	1			2
VI.—NON-VENEREAL DISEASE OF THE GENITO-URINARY SYSTEM.									
Acute Nephritis and Bright's Disease...		1			2	6	6	4	19
Other Diseases of the Kidney						1			1
Diseases of the Bladder... ..						1	2	2	5
Diseases of the Urethra						1			1
Diseases of the Prostate							3		3
Uterine Tumour						1			1
Ovarian Tumour						1			1
VII.—THE PUERPERAL STATE.									
Puerperal Hæmorrhage... ..						1			1
Rupture of Uterus					1				1
VIII.—DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE.									
Gangrene							1	1	2
Carbuncle... ..							1		1
Acute Abscess						1			1

CAUSES OF DEATH.	AGES AT DEATH.								Total at all Ages.
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 45	45 to 65	65 to 75	75 and upwards	
IX.—DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.									
Amputation of Leg						1			1
X.—MALFORMATIONS.									
Congenital Malformations	2								2
XI.—DISEASES OF EARLY INFANCY.									
Premature Birth	15								15
Infantile Atrophy, Debility, Marasmus	24								24
Icterus Neonatorum	1								1
Want of Breast Milk	1								1
Atelectasis	3								3
XII.—OLD AGE.									
Senile Decay						2	12	54	68
XIII.—AFFECTIONS PRODUCED BY EXTERNAL CAUSES.									
Suicide by Asphyxia						1			1
„ Hanging					1				1
„ Shooting				1					1
„ Cutting Vein					1				1
Other Suicides						1			1
Accidental Poisoning						1			1
Accidental Burns		1							1
Suffocation, Asphyxia	2								2
Overlain	2								2
Accidental Injury by Firearms...				1					1
Accidental Crushing by Vehicle ...					2	1			3
Effects of Heat-Insolation							1		1
Homicide by Lacerating Brain...	1								1

Summary of Deaths from the various Groups of Diseases.

I. General Diseases	17	29	13	19	36	63	40	6	223
II. Diseases of the Nervous System	3	3		1	2	20	23	14	66
III. „ Circulatory „	2			2	7	29	33	18	91
IV. „ Respiratory „	10	10	1	1	5	13	15	25	80
V. „ Digestive „	34	4	2	1	6	10	8	3	68
VI. „ Genito-Urinary „		1			2	10	11	6	30
VII. „ Puerperal State					1	1			2
VIII. „ Skin and Cellular Tissue						1	2	1	4
IX. „ Bones and Organs of Locomotion						1			1
X. Deaths due to Malformations	2								2
XI. „ of Early Infancy	44								44
XII. „ of Old Age						2	12	54	68
XIII. „ due to External Causes	5	1		2	4	4	1		17
Totals from all Causes	117	48	16	26	63	154	145	127	696

ANNUAL REPORT

UPON THE

Meteorology of Cheltenham,

BY

MR. A. C. SAXBY,

F.R. MET : SOC. ;

BOROUGH METEOROLOGIST,

FOR THE YEAR 1911,

LATITUDE $51^{\circ} 53' 45''$ N.

LONGITUDE $2^{\circ} 3' 21''$ W.

HEIGHT OF BAROMETER ABOVE MEAN SEA LEVEL, 206ft.

THE INSTRUMENTS ARE OF THE HIGHEST QUALITY
AND HAVE BEEN VERIFIED AT KEW.

*To the Mayor, Aldermen, and Councillors of the
Borough of Cheltenham.*

GENTLEMEN,

I have pleasure in submitting to you my Annual Report for Cheltenham during the year 1911, being the 34th year during which records have been taken.

The observations have been taken twice daily by myself or qualified assistant. The Sunshine Recorder at Pittville has been very carefully attended to by the Custodian of the Pump Room, the Charts being brought in with regularity.

The weekly Reports have been sent to the Royal Meteorological Society as formerly and also been published in the "Cheltenham Examiner," "Gloucestershire Echo," "Cheltenham Chronicle," and the "Looker-On."

I beg to tender my best thanks to those observers who have sent me returns from various stations over the county, and to all who have assisted me in the work.

I am, Gentlemen,

Your obedient Servant,

AUSTIN C. SAXBY,

F.R. MET. SOC.,

Borough Meteorologist.

February, 1912.

THE METEOROLOGY OF CHELTENHAM.

Abstract of Meteorological Observations taken by A. C. SAXBY, F.R., Met. Soc., Borough Meteorologist.

Latitude 51° 53' 45" N. Longitude 2° 3' 21" W. For particulars see next page.

1911. Month.	Corrected Mean of Barom. 9 a.m. & p.m. At sea-level.	AIR TEMPERATURES.										Relative Humidity at 9 a.m. and p.m.	Rainfall.		Sunshine Bright HOURS
		Means of			Absolute Max. and Min.				Total fall	No. of Rainy Days.					
		Dry Bulb 9 a.m. & p.m.	Max.	Min.	Date.	Max.	Date.	Min.							
January	INCHES. 30·104	° 37·9	° 42·9	° 33·6	26	° 53	7	° 28	% 89	IN.: 1·12	12	66			
February.....	29·959	40·8	46·1	36·1	25	57	1	21	85	1·20	10	61			
March	29·710	41·1	47·1	36·5	2	58	17	29	87	1·66	17	76			
April	29·805	46·0	52·8	39·7	14	63	6	28	81	0·63	11	142			
May	29·773	56·5	66·0	46·9	29	78	23	29	78	0·76	4	192			
June.....	29·773	60·1	68·9	51·1	47	79	14	39	75	1·97	12	219			
July	29·941	66·7	78·0	56·4	29	89	11	46	70	0·47	3	315			
August... ..	29·785	66·2	76·7	57·1	9	93	31	47	74	1·66	10	234			
September ...	29·850	58·2	69·0	48·3	8	91	22	35	81	1·50	11	212			
October.....	29·692	49·3	56·9	43·5	19	65	29	30	89	1·79	13	112			
November ...	29·499	43·4	48·4	38·5	1	58	21	28	86	2·52	18	62			
December.....	29·471	41·2	48·6	39·7	17	54	8	29	90	6·45	24	55			
Means	29·780	50·6	59·3	43·9	—	70	—	32	82	Total for Year. 22·23	145	145·6			
	1	2	3	4	5	6	7	8	9	10	11	12			

NOTES ON THE TABLES.

(See previous page).

COLUMN 1 is the mean reading of the Barometer at 9 a.m. and 9 p.m., corrected for temperature—32° Fahrenheit—and reduced to mean sea-level, the instrument being kept at 397, High Street, 206 feet above mean sea-level.

COLUMN 2 is the means of Dry Bulb readings in the screen, both at 9 a.m. and 9 p.m.

COLUMNS 3 and 4.—The maximum and minimum thermometers are read and set at 9 a.m. and 9 p.m., and entered to the same day. Instruments and screen are in Montpellier Gardens, 216 feet above mean sea-level.

COLUMN 9.—The relative humidity is calculated by dividing the elastic force of aqueous-vapour at the temperature of the dew-point for the month by that corresponding to the actual temperature of the air.

COLUMN 10.—The rainfall is taken at 9 a.m. and the total entered to previous day. The rain gauge, placed within the enclosure at Montpellier Gardens, is of Snowdon pattern, 5 inch size, the rim being one foot above the ground.

COLUMN 12.—The amount of bright sunshine is registered by an improved Campbell Stokes Recorder, which is mounted on the top of Pittville Pump Room. Prior to 1908 Jordan's Twin-cylinder Recorder was used.

WIND.

Analysis, with percentage, of the observations of the Wind for the year 1911:—

Month.	Calms.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
January ...	5	6	3	13	12	15	28	2	9
February ...	10	2	3	3	11	4	33	9	9
March ...	5	9	6	10	20	6	15	9	13
April ...	2	6	12	0	13	15	30	3	9
May ...	12	2	5	3	6	12	14	23	16
June ...	6	3	7	3	2	10	26	18	15
July ...	11	3	0	0	3	7	39	15	15
August ...	5	2	10	2	7	18	31	6	12
September	6	1	5	3	3	6	53	4	9
October ...	3	4	23	3	9	16	24	2	9
November .	3	2	15	2	7	9	40	8	4
December...	2	2	0	3	21	9	49	3	4
Totals ...	70	42	89	45	114	127	382	102	124
Percentages	6.3	3.8	8.2	4.6	10.3	11.6	34.4	9.3	11.5

COMPARATIVE TABLE OF THE METEOROLOGY OF CHELTENHAM FOR THE YEARS 1878-1911.

A division has been made in the returns comprising this table, keeping the years previous to 1903-1911, when the instruments were removed to Montpellier Gardens, this situation being more central and giving more accurate observations of Cheltenham than formerly.

This is especially marked with regard to Humidity of the town. The former position was on the extreme North side of Cheltenham, the screen then being within a short distance of the stream of water which at that part forms the boundary between the Borough and Prestbury, and was thus detrimental to the natural dryness of the atmosphere.

Year.	Atmospheric Pressure.	MEAN AIR TEMPERATURES				Humidity.		Rainfall	
		Max.	Min.	Mean	Range	9 a.m.	9 p.m.	Inches.	Days.
	INCHES.	°	°	°	°	%	%		
1878	29.913	56.1	41.5	48.8	14.6	83	88	33.18	176
1879	29.944	52.2	38.5	45.3	13.7	87	89	32.63	212
1880	29.971	55.8	40.5	48.1	15.3	85	88	33.72	177
1881	29.957	55.0	38.9	46.9	16.1	82	85	25.28	185
1882	29.914	55.9	41.5	48.7	14.4	81	86	37.92	214
1883	29.964	55.6	40.6	48.1	15.0	85	89	29.93	204
1884	29.978	56.8	41.9	49.3	14.9	84	89	24.04	190
1885	29.930	54.8	40.0	47.4	14.8	84	87	26.45	193
1886	29.912	55.0	40.6	47.8	14.4	83	86	32.55	193
1887	30.029	55.3	38.6	46.9	16.7	80	83	22.78	153
1888	29.959	53.8	40.1	46.9	13.7	82	84	28.85	195
1889	29.971	55.4	40.6	48.0	14.8	84	87	27.07	181
1890	29.959	55.6	40.1	47.8	15.5	84	88	20.09	191
1891	29.957	55.1	40.0	47.5	15.1	83	87	33.14	192
1892	29.948	54.6	38.7	46.6	15.9	82	85	19.45	175
1893	29.990	59.1	41.3	50.2	17.8	81	83	19.91	169
1894	29.963	56.2	41.6	48.9	14.6	83	87	29.12	194
1895	29.923	56.2	39.6	47.9	16.6	83	87	24.99	174
1896	30.030	57.0	41.4	49.2	15.6	83	86	21.54	185
1897	29.969	56.8	42.8	49.8	14.0	82	86	26.23	191
1898	30.009	58.2	42.5	50.3	15.7	82	85	24.23	173
1899	29.989	58.5	41.2	49.8	17.3	81	85	25.72	162
1900	29.928	57.3	41.1	49.2	16.2	80	84	28.44	203
1901	29.966	56.2	40.1	48.1	16.1	79	83	23.27	169
1902	29.906	56.9	42.4	49.6	14.5	84	87	22.53	176
Means	29.959	55.9	40.6	48.2	15.3	82	86	26.92	185
1903	29.883	55.8	43.0	49.4	12.8	82	84	35.75	215
1904	29.988	55.7	42.8	49.2	12.9	80	84	22.41	177
1905	30.005	55.7	42.9	49.3	12.8	79	83	23.79	165
1906	29.985	56.8	43.4	50.1	13.4	78	82	24.49	164
1907	29.966	55.4	43.1	49.2	12.3	80	85	29.00	174
1908	29.803	56.8	41.9	49.3	14.9	81	84	20.16	158
1909	29.956	55.1	41.7	49.3	13.4	82	84	27.9	191
1910	29.968	55.6	43.0	52.6	12.6	85	87	31.3	175
1911	29.780	59.3	43.9	50.6	15.4	81	83	22.3	145
Means	29.910	56.5	42.8	50.4	13.6	82	84	26.7	171

REMARKS FOR THE YEAR 1911.

The year has been a most abnormal one, records have been established for the greatest drought, amount of brilliant sunshine and highest summer temperatures during the 34 years in which records have been taken.

The dry period commenced on January 12th, there being only one wet day from that date to end of month, and rain recorded on one day only from the 1st to 18th of February, *i.e.*, two rainy days in 37. During May no rain was registered from the 4th to 29th inclusive, in June only one rainy day until the 16th. July shows three wet days; the 1st, 26th and 29th. August had 14 consecutive dry days between the 5th and 20th. December was a remarkably wet month, the total being 6.43 inches, one has to go back to the wet August of 1879 (6.50 inches) to surpass it.

The maximum Shade temperature was reached on August 9th being 93° , the previous record being 90.4° in September, 1906, September the 8th of this year also exceeded by 1° the 1906 temperature.

The Solar radiation temperature of 143° on July 28th surpasses the record 139° July 1905. Total bright sunshine of 315 hours for July is the greatest amount for any month since records have been taken.

A great feature of the long hot summer was the unusually small amount of thunder and lightning.

The mean of the barometer readings for the year about quarter of an inch lower than the average.

JANUARY.—The barometer, standing high, maintained a good position until the 10th, a fall of one inch then occurring. This was accompanied by gale of wind and rain. A sharp recovery followed and a fine bright period, barometer remaining high and steady. Range of pressure 1.329 inch. Temperatures throughout the month were normal, the 31st being the only day of appreciable frost. Sunshine was very sparse at the beginning of the year but increased later and the total amount is 10 hours above the mean for the month. Rainfall very light, practically none falling after the 11th, the total is 1.11 inch below the normal.

FEBRUARY.—This month opened with an unusually high barometer, remaining so until 10th when a sharp fall occurred, 11th saw a recovery which lasted until 18th, thence undulatory until the end of the month. Range of pressure 1.477. Temperatures cool at first, then gradually rose until mild muggy weather from the 18th onwards. The mean temperature for the month is 1.7° above the normal. With one exception no rain fell until the 18th and the total fall is 0.88 inch below the average. A gale of wind from the South West passed over Cheltenham on morning of 23rd. A very poor supply of bright sunshine, total amount recorded being 17 hours below the average.

MARCH.—The high barometer with which March started gradually resumed an average position with much undulation. Atmospheric pressure was consistently low from 11th until the 22nd, rose on 23rd only to fall again on 27th. Range of pressure 0·937 inch. The thermometers also were high at the beginning of the month but fell steadily. The period of low atmospheric pressure was also one of low temperatures accompanied by keen winds from an easterly direction. The average is just about normal. Rainfall light, 0·11 below the average. Hailstorms were experienced on 9th and accompanied by snow on the 12th. Light snowfalls also recorded on 15th and 25th. A very poor supply of bright sunshine, nearly 50 hours less than usual. Although only 7 blank days there were only 4 with a record of more than 5 hours.

APRIL.—The Barometer, high and steady the earlier half, fell consistently from 14th to 19th, there was then a sharp and complete recovery. This was not long maintained and an undulatory fall occupied the remainder of the month. Total range 1·150 inch. Temperatures at first low owing to the dull weather and cold winds. A spell of fine bright weather set in on 12th, lasting over the Easter holidays, Good Friday the 14th registered 62·9° shade. The mean of the month was 0·2° only below the normal, though 12 recorded frosts. Rainfall very light indeed. Two light hail-storms and two snow-storms are recorded. Total fall 1·31 below the average. A gale of wind from the South-East was experienced during the morning of the 19th. Of bright sunshine April recorded practically a normal amount, the 14th contributing over 11·5 hours towards it.

MAY.—Atmospheric pressure during May was on the whole great. The barometer fell from 10th to 14th, and another fall occurred on the 26th. Range of pressure 0·977 inch. Temperatures were normal during the earlier half of the month. About the 10th a very warm spell set in, over 78° being registered in the shade on the 20th, constituting a May record for Cheltenham. Mean for the month 4·9 above normal. Rain fell lightly on four days only, distant thunder was heard on 11th and 13th. Total is 1·19 inch below the normal. Sunshine well above the average, over 15 hours being recorded on the 29th. On the second a gale of wind from the South passed over Cheltenham.

JUNE.—Barometric range 1·009 inch. The high readings of May were continued until the 16th, the fall lasting until 20th, only to drop again on 21st. Barometer remained low for the succeeding days. Temperatures for the first week were tropical, a change taking place on 9th and thereafter low throughout the month. Mean is 1·8° below the normal. With the exception of a thunderstorm on the 4th there was no rain until 16th. On 19th, 22nd and 24th very heavy showers were experienced which greatly marred the local coronation and carnival festivities. Total fall is 0·27 inch below the average. During the latter half of the month the winds were unseasonable and a gale from the East was experienced on 16th. The month opened with a flood of sunshine, but from 16th onwards became very intermittent. The total is 27 hours above the average with only two sunless days.

JULY.—Atmospheric pressure was light at first and then increased rapidly from the 3rd. The Barometer maintained the high position until 15th, when a slight but steady fall occupied the rest of the month. Range of pressure 0.987 inch. Temperatures were memorable, breaking records in many cases. The mean shade reading is 6.0° above the normal, and 89.2° was reached in the shade. This month is exceptional for its long continued hot weather, absence of rain and blazing sunshine. The mean solar radiation temperature of 131° is a record, the total amount of bright sunshine is 126 hours above the average and 60 hours above the highest amount yet recorded at Pittville. Rainfall totals no less than 2.12 inches below the average.

AUGUST.—Atmospheric pressure very erratic until the 9th, increasing steadily until the 20th, and remained high for the rest of the month. Range of pressure, 0.694 inch. Temperatures the earlier portion of the month were normal. On 7th a heat wave commenced, and on 9th all previous records were broken by the shade thermometer registering 93.2° , being 2.8° higher than Sept. 2nd, 1906. Normal August weather succeeded, the average being no less than 6.4° above the normal. Sunshine well supplied, 31 hours more than the average. Rainfall continued light. On 20th a thunderstorm is recorded, accompanied by a sharp but heavy shower of rain. Total fall, 1.02 inch below the average.

SEPTEMBER.—This month opened with a high and steady barometer. On 18th a fall of 1 inch was experienced, thence undulatory till the end of the month. Total range, 0.989 inch. Temperatures still above normal. The 8th was exceptionally hot, 90.7° being registered in the shade. Mean temperature for the month is 3.1° above the normal. Rainfall still light. A welcome shower of more than 0.30 inch fell on 12th, and nearly half an inch on 27th, but total fall is 0.95 inch deficient of monthly average. Thunder was heard on 11th. Sunshine still good, 76 hours more than the average.

OCTOBER.—A rapid fall in the Barometer occurred on 2nd, and this was not made good until 9th. On 19th an unusual disturbance took place, when a gale of wind from the South was experienced. A partial recovery occurred on 22nd, to fall again on 26th. On 28th a sharp rise left the barometer in a high position. Total range of pressure, 1.538 inch. Thermometer started low, but soon rose to a normal position. On 15th temperature was unusually mild, and continued mild both day and night until 25th, thence normal. Mean for the month is 2.1° above the normal. Rainfall still light, the total fall being nearly 1 inch below the average. Sunshine supply good, 16 hours in excess of mean.

NOVEMBER.—An undulatory fall occupied the barometer until the 11th, and further falls on 15th and 17th, left it very low. A steady rise set in, and normal position was reached on 29th. Fell on 30th. Range of pressure, 1.525 inch. Temperature milder the first week. On 10th and 11th frosts were recorded, milder again on 13th. Frost again recorded on 21st, and very variable throughout the month. Result a

mean reading. The month opened wet, and continued so until 12th, when a fine spell ensued. Snow fell on 26th. Total fall 0·12 below average. Sunshine a normal amount.

DECEMBER. Barometer started low and was very erratic until the 23rd, not being really steady until 27th, and only reached the normal on 31st for the first time this month. Range, 1·600 inch. Very wintry weather with high thermometers characterised the month, the mean reading being 5·3 above normal. Winds were unusually strong throughout the month, and mainly from the south-west. Rainfall very heavy indeed, the total being a record, and no less than 4·11 inches above the average. Sunshine much more than would be thought from the heavy rainfall and busy barometer, 16 hours more than usual being recorded.

